

# TCS Model Placement Paper

## VERBAL ABILITY

1. In the following question, choose the word opposite in meaning to the given word.

Querulous

A -

Agreeable

B -

Petulant

C -

Cross

D -

Cauterise

### Solution

'Querulous' means complaining in a petulant manner. Its antonyms are happy, agreeable, genial, etc. Thus, (a) is the correct answer.

2. In the following question, a sentence is given with a phrase or idiom in brackets. Select the option given below that can replace the bracketed phrase.

I got a bit (carried on) while talking to her since I had lost my cool completely.

A -

carried away

B -

carried off

C -

carried out

D -

No Improvement

### Solution

We need a phrasal verb here that means to lose one's control. CARRIED AWAY means to lose one's control, and will fit here. Thus, (a) is the right answer.

CARRIED ON means to continue doing something. CARRIED OFF means to take something and go away. CARRIED OUT means to execute.

**3.** In the given sentence, a blank is given indicating that something is missing. From the given four options, choose the one that provides the correct word to be filled in the blank, thereby making the sentence grammatically and contextually correct.

A grassy pitch with bare patches means the tourists have some difficult \_\_\_\_\_ to make for the first Test against West Indies.

A -

Picked

B -

Choices

C -

Selection

D -

Tusks

### **Solution**

The missing word is a verb (in plural form) which denotes the difficulty (faced by the visiting team) in picking players. Also, the verb has to be in the present tense. Only option B ('choices') fulfils that requirement. Thus, (b) is the correct answer.

**4.** In the following question, a sentence has been given in Active/ Passive Voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active Voice.

We must write the name before the designation.

A -

The name has to be written by us before the designation.

B -

The name should be written by us before the designation.

C -

The name must be written by us before the designation.

D -

The name will be written by us before the designation.

### **Solution**

The sentence is in active voice and in subjunctive mood. Follow the rules below to convert a sentence in subjunctive mood to passive voice:

1. The subject clause will become the object clause. Here, the subject pronoun WE will change to the object of the verb and assume the object form US, and the object THE NAME will change into the subject and begin the sentence.

2. Replace MUST WRITE with MUST BE WRITTEN. The passive voice construction to be followed here is "MUST + BE + past participle".

3. Add the conjunction BY before US to link the verb with its object.

Option (c) is the right answer.

5. In the following question, choose the word opposite in meaning to the given word.

Redundant

A -

extensive

B -

essential

C -

appropriate

D -

excuse

### **Solution**

(b) is the right answer. REDUNDANT means not or no longer needed or useful; superfluous. ESSENTIAL means absolutely necessary; extremely important. It is the antonym.

EXTENSIVE- covering or affecting a large area.

APPROPRIATE- suitable or proper in the circumstances.

EXCUSE- a reason or explanation given to justify a fault or offence.

6. In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error' as your answer.

One of the reasons for the huge dissatisfaction (1)/with the previous government was (2)/the inability of the economy to creation decent jobs(3)/ No error (4).

A -

1

B -

2

C -

3

D -

4

### Solution

(c) is the right answer. In 3, replace CREATION with CREATE. We need a verb in the base form to fit the infinitive construction TO+VERB. Thus, (c) is the right answer.

7. In the following question, a sentence has been given in Direct/ Indirect speech. Out of the four alternatives suggested, select the one which best expresses the same sentence in Direct/ Indirect speech.

“Do you have a companion?” I said to her.

A -

I asked her if she had a companion.

B -

I asked her do you have a companion.

C -

I asked her did she have a companion.

D -

I asked her if she has a companion.

### **Solution**

Option (a) is the right answer.

The sentence is in direct speech and in interrogative mood. To convert this sentence to the indirect speech, follow these rules:

1. Remove the comma and the inverted commas.
2. Change the reporting verb SAID to ASKED. The preposition TO is redundant after ASKED, so it will be removed. Begin the indirect speech sentence with the reporting speech clause I ASKED HER.
3. Put IF between the reporting and reported speeches.
4. The second person subjective pronoun YOU will change to the third person subjective SHE.
5. The simple present tense DO YOU HAVE will change to the simple past SHE HAD.
6. Use the indicative mood syntax: Reporting speech clause (I ASKED HER) + preposition (IF) + Subject (SHE) + verb clause (HAD) + Object (A COMPANION).

**8.** In the given sentence, a blank is given indicating that something is missing. From the given four options, choose the one that provides the correct word to be filled in the blank, thereby making the sentence grammatically and contextually correct.

The life-long academic takes a/an \_\_\_\_\_ bush track to reach the Okeover community gardens, her eyes scanning the sky for native birds.

A -

Overgrown

B -

Backed

C -

Clique

D -

Paste

### **Solution**

The missing word is an adjective that can be used to describe the noun 'bush track'. Only option A ('overgrown') is the appropriate choice.

'Clique' means a small close-knit group of people.

Thus, (a) is the correct answer.

9. In the question given below, rearrange the sentences in the correct order, and choose the correct option.

P. Our goal is to amplify the research, advocacy, policy, best practices and support initiatives.

Q. We recognize that any cancer diagnosis is devastating.

R. But with this program we hope to reinforce the idea that it does not have to be one person's burden to bear.

S. In this way, we can improve the care of patients and their loved ones dealing with cancer.

A -

PSQR

B -

QRPS

C -

QSPR

D -

PRQS

### **Solution**

QRPS is the final order.

Q begins the passage by introducing the topic that is to be discussed in the passage - cancer diagnosis. R follows by telling us that the aim of the program, which is to reinforce that cancer need not be one person's burden. P follows by

telling us more about the goal of the program. S concludes the passage by telling us how the objective would be achieved. Thus, (b) is the right answer.

**(10-13)** Directions: Read the following passage carefully and answer the questions.

Getting hold of a Dutch woman on a Wednesday can be tricky. For most primary schools it is a half-day, and as three-quarters of working women are part-time, it is a popular day to take off. The Dutch are world champions at part-time work and are often lauded for their healthy work-life balance and happy children. But these come at a price. Among western European countries, the Netherlands has the largest gap between men's and women's pension entitlements, and the largest in monthly income. Even though a similar share of Dutch women are in the labour force as elsewhere in western Europe, their contribution to GDP, at 33%, is far lower, largely because they work fewer hours.

In the rich world part-time working took off in the second half of the 20th century, as services replaced manufacturing and women piled into the labour market. It remains essential for helping women work, particularly after giving birth, and in countries with traditional gender norms. But it can prolong—or even worsen—gender inequality and make women less independent by locking them into jobs with worse pay and prospects. Differences in working hours explain a growing part of the gender pay gap. That share could increase as labour markets disproportionately reward those willing and able to work all hours—who are mostly men.

Almost one in five workers globally are part-time (defined as working fewer than 35 hours a week). In many countries, married women are the group most likely to work part-time, and married men are the least likely. In the EU nearly one in three women in the workforce aged 20-64 are part-time, compared with fewer than one in 12 men. After the financial crisis the number of “involuntary” part-timers—workers who would take more hours if they could get them—rose alarmingly in some countries, including America, Britain and Spain. Family obligations often lead women to choose to work part-time. In America, 34% of female part-timers, and just 9% of male ones, cite this as their main reason. In the EU the figures are 44% and 16% respectively. Part-time work can be very positive when the alternative would have been women leaving the labour market altogether. Its availability has been credited with the rapid growth of female participation not just in the Netherlands, but also in

Germany, Japan and Spain, where it has shifted the standard household from one to one-and-a-half breadwinners. In Germany all the growth of the female workforce in the past 15 years has been down to the rise in part-timers.

But for women, there is a cost. Apart from Japan and South Korea, where women are excluded from most well-paid jobs—part-time working and the gender pay gap are significantly correlated. The mix of reasons varies from country to country, but three stand out. First, in nearly everywhere that has data available, part-time jobs pay less per hour than full-time ones. Sometimes this is within an occupation. The hourly-pay penalty for part-timers in America was highest in jobs that rewarded strong client relationships, such as in retail, or where workers are always on-call, such as web development. But more often it is between occupations: the types of jobs that can readily be done part-time, or are offered part-time, are lower-paid than those that are not.

Second, part-timers are more likely to have a “bad job”—one that offers little training and few legal rights. In America 39% of female part-time workers, compared with 6% of full-time men and 9% of full-time women, are in the “secondary” labour market, with low pay, no benefits and few opportunities to move to better jobs. Going part-time in Germany often involves “occupational downgrading”: accepting a job that does not use the worker’s skills to the fullest.

Even good jobs can become worse when done part-time. For graduates the penalty is particularly large, since they earn a larger return on experience. A quarter of Britain’s hourly gender pay gap can be explained by women’s greater propensity to work part-time. Third, part-time work can be a trap. Although often a short-term expedient, most women who start to work part-time continue for longer than intended. Many never go full-time again. The share of Dutch women working full-time peaks at age 25-30 and then falls, never to recover—quite unlike the pattern for men, who peak later and then stabilise.

10. As per the passage, which of the following statements is true?

A -

Part-time work pays as much as full-time work.

B -

Part-time work is the only way to ensure work-life balance.

C -

Part-time work pays less than full-time work.



D -

Part-time work ensures upwards social mobility.

E -

All of the above

### **Solution**

(c) is the right answer. Refer to the lines: *First, in nearly everywhere that has data available, part-time jobs pay less per hour than full-time ones.* Thus, (a) is false.

(b) is false. Refer to the lines: *The Dutch are world champions at part-time work and are often lauded for their healthy work-life balance and happy children.* The passage merely states that the Dutch are often praised for their work-life balance, but it does not attribute this to part-time work.

(d) is false. The passage does not talk about upward social mobility.

**11.** Which of the following statements represent the author's view regarding part-time work?

1. Part-time work holds a lot of significance as it can help women get back to work after giving birth.

2. In societies with strict gender roles, part-time work ensures that women find work.

3. There will come a time when part-time work will pay as much as full-time work.

A -

Only 1

B -

Only 2 and 3

C -

Only 1 and 2

D -

Only 1 and 3

E -

All 1,2 and 3

## Solution

(c) is the right answer. Both (1) and (2) are correct. Refer to the lines: *In the rich world part-time working took off in the second half of the 20th century, as services replaced manufacturing and women piled into the labour market. It remains essential for helping women work, particularly after giving birth, and in countries with traditional gender norms.* Thus, part-time work is critical for women who want to work after giving birth and also in societies with gender norms.

(3) is incorrect. The author does not discuss the future of part-time work in the passage.

**12.** Which of the following has been cited as the main reason behind women taking up more part-time work than men?

A -

Unlike part-time work, full-time work requires specialization.

B -

Family obligation

C -

Lack of women representation in STEM fields.

D -

Lack of incentives

E -

All of the above

## Solution

(b) is the right answer. Refer to the lines: *Family obligations often lead women to choose to work part-time. In America, 34% of female part-timers, and just 9% of male ones, cite this as their main reason. In the EU the figures are 44% and 16% respectively.* Thus, family obligation has been cited as the main reason behind women choosing part-time work over full-time work.

**13.** As per the passage, which of the following is NOT a characteristic of a part-time job?

A -

It allows people to work from their home.

B -

It does not involve much training.

C -

It pays less than a full-time job.

D -

The number of working hours are less than that of a full-time job.

E -

All of the above

### **Solution**

(a) is the right answer as it has not been mentioned in the passage.

(b) is a characteristic. Refer to the lines: *Second, part-timers are more likely to have a “bad job” —one that offers little training and few legal rights.*

(c) is a characteristic. Refer to the lines: *First, in nearly everywhere that has data available, part-time jobs pay less per hour than full-time ones.*

(d) is a characteristic. Refer to the lines: *Differences in working hours explain a growing part of the gender pay gap. That share could increase as labour markets disproportionately reward those willing and able to work all hours— who are mostly men.*

**14.** Which of the following cannot fit in the blank?

Part-time work is\_\_\_\_\_.

A -

more likely to be chosen by married women than married men.

B -

the reason behind the rise of women participation in the workforce in Germany.

C -

leads to widening of the gender pay gap.

D -

not related to gender pay gap.

E -

None of the above

### Solution

(d) is the right answer as it cannot fit in the blank. Refer to the lines: *Apart from Japan and South Korea, where women are excluded from most well-paid jobs—part-time working and the gender pay gap are significantly correlated.* Thus, (c) can fill the blank.

(a) can fill the blank. Refer to the lines: *Almost one in five workers globally are part-time (defined as working fewer than 35 hours a week). In many countries, married women are the group most likely to work part-time, and married men are the least likely.*

(b) can fill the blank. Refer to the lines: *In Germany all the growth of the female workforce in the past 15 years has been down to the rise in part-timers.*

**15.** In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If the sentence is free from error, select 'No Error'.

A -

Much of the chronic

B -

and life-threatening diseases

C -

Indians face are related

D -

to how we live in cities.

E -

No error

### Solution

In A, replace MUCH with MANY as the former is used to modify uncountable nouns and the latter is used to modify countable nouns. Here, DISEASES is countable, which means MANY should be used here. Thus, (a) is the right answer.

**16.** In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If the sentence is free from error, select 'No Error'.

A -

The consequences of a hospital

B -

infection can be seriously,

C -

including a much longer stay

D -

in hospital and even death.

E -

No error

### **Solution**

In B, replace the adverb SERIOUSLY with the adjective SERIOUS as it is being used to modify the noun CONSEQUENCES. Thus, (b) is the right answer.

**17.** In the question given below, a sentence is given with one blank, followed by five options, each having a word which may or may not fit in the blank. From the given options, choose the one that gives the correct word that fits in the blank.

Growing food is often the driving \_\_\_\_\_ behind community gardening projects, whether purely for the consumption of the gardeners or for local distribution or sale.

A -

contributor

B -

factors

C -

force

D -

effort

E -  
strength

### **Solution**

We need a noun here to be modified by the adjective DRIVING. The sentence talks about how growing food is the impetus driving community gardening projects. FORCE can fit here and convey the requisite meaning, which makes (c) the right answer.

Contributor - someone or something that contributes or leads to something. FACTORS is plural. Effort - attempt to do something. Strength - power.

**18.** In the question given below, a sentence is given with one blank, followed by five options, each having a word which may or may not fit in the blank. From the given options, choose the one that gives the correct word that fits in the blank.

Today, more than 700 million people around the world \_\_\_\_\_ water from unsafe or untreated sources, such as wells, springs and surface water.

A -  
consume

B -  
eat

C -  
drinking

D -  
concede

E -  
conduct

### **Solution**

We need a verb here in the plural form to agree with the plural subject PEOPLE. The sentence talks about how more than 700 million people drink water that is unsafe or untreated. CONSUME means to eat or drink and will fit here, which makes (a) the right answer.

EAT cannot be used for liquids. DRINKING is in the continuous form and will be incorrect unless preceded by the helping verb ARE/ WERE. Concede - yield. Conduct - carry out.

**19.** In the question given below, a sentence is given with one blank, followed by five options, each having a word which may or may not fit in the blank. From the given options, choose the one that gives the correct word that fits in the blank.

For several decades after Cuba's 1959 revolution, socialist bloc countries \_\_\_\_\_ for nearly all of its foreign trade.

A -  
informed

B -  
inflated

C -  
allowed

D -  
ensured

E -  
accounted

### **Solution**

We need a verb here to link the subject COUNTRIES with the object FOREIGN TRADE. The verb will take the preposition FOR after it. The sentence talks about how socialist bloc countries contributed to nearly all of the foreign trade of Cuba. ACCOUNTED will fit here, which makes (e) the right answer.

Informed - to give information to someone. Inflated - swelled. Allowed - permitted. Ensured - made sure or certain of something.

**(20-24)** Directions: In the question given below, a set of sentences is given, which when properly sequenced, form a coherent paragraph. Arrange the sentences in the correct sequence, and answer the questions.

P. It suggests that alongside carbon taxes, which put a price on emissions, we also need to incentivise strategies that remove CO<sub>2</sub> from the atmosphere.

Q. However, a new study shows that carbon taxes, which are the currently favoured system for reaching this target, will not be enough to avoid catastrophic climate change.

R. The Paris Agreement, signed in 2015, requires nations to collectively limit global warming to 2°C by 2100, and to pursue efforts to limit the temperature increase even further to 1.5°C.

S. This goal requires human-caused carbon dioxide (CO<sub>2</sub>) emissions to reach zero by 2070 and become negative afterwards, using strategies that remove CO<sub>2</sub> from the air.

T. It further adds that this will encourage these strategies to be implemented at a commercial scale in order to reach the Paris Agreement goals.

20. Which of the following would be the FIRST statement after rearrangement?

A -

P

B -

R

C -

Q

D -

S

E -

T

### **Solution**

(b) is the right answer. RSQPT is the correct sequence. R begins the passage by establishing the subject-The Paris Agreement and what it aims to achieve. It states that it requires the nations to limit global warming to 2°C by 2100 and try to limit the rise in global temperature to 1.5°C. S follows R. It uses the pronoun THIS. It discusses the GOAL set by the Paris Agreement, which has been discussed in R. It states that to achieve the target set by the Paris Climate Agreement, human-caused carbon dioxide (CO<sub>2</sub>) emissions should become zero by 2070 and become negative afterwards. Q follows S. It begins with the conjunction HOWEVER, which is used to link contrasting statements. It talks



about the findings of a study, which states that the current system of carbon taxes is inadequate. P and T form a pair. P talks about how there is a need for putting a price on emissions and incentivisation of strategies that reduce CO<sub>2</sub> in the atmosphere. T states that incentives will lead to the implementation of these strategies at a commercial scale.

21. Which of the following would be the SECOND statement after rearrangement?

A -

P

B -

R

C -

Q

D -

S

E -

T

### **Solution**

(d) is the right answer. RSQPT is the correct sequence. R begins the passage by establishing the subject-The Paris Agreement and what it aims to achieve. It states that it requires the nations to limit global warming to 2°C by 2100 and try to limit the rise in global temperature to 1.5°C. S follows R. It uses the pronoun THIS. It discusses the GOAL set by the Paris Agreement, which has been discussed in R. It states that to achieve the target set by the Paris Climate Agreement, human-caused carbon dioxide (CO<sub>2</sub>) emissions should become zero by 2070 and become negative afterwards. Q follows S. It begins with the conjunction HOWEVER, which is used to link contrasting statements. It talks about the findings of a study, which states that the current system of carbon taxes is inadequate. P and T form a pair. P talks about how there is a need for putting a price on emissions and incentivisation of strategies that reduce CO<sub>2</sub> in the atmosphere. T states that incentives will lead to the implementation of these strategies at a commercial scale.

**22.** Which of the following would be the THIRD statement after rearrangement?

A -

P

B -

R

C -

Q

D -

S

E -

T

### **Solution**

(c) is the right answer. RSQPT is the correct sequence. R begins the passage by establishing the subject-The Paris Agreement and what it aims to achieve. It states that it requires the nations to limit global warming to 2°C by 2100 and try to limit the rise in global temperature to 1.5°C. S follows R. It uses the pronoun THIS. It discusses the GOAL set by the Paris Agreement, which has been discussed in R. It states that to achieve the target set by the Paris Climate Agreement, human-caused carbon dioxide (CO<sub>2</sub>) emissions should become zero by 2070 and become negative afterwards. Q follows S. It begins with the conjunction HOWEVER, which is used to link contrasting statements. It talks about the findings of a study, which states that the current system of carbon taxes is inadequate. P and T form a pair. P talks about how there is a need for putting a price on emissions and incentivisation of strategies that reduce CO<sub>2</sub> in the atmosphere. T states that incentives will lead to the implementation of these strategies at a commercial scale.

**23.** Which of the following would be the FOURTH statement after rearrangement?

A -

P

B -

R

C -

Q

D -

S

E -

T

### **Solution**

(a) is the right answer. RSQPT is the correct sequence. R begins the passage by establishing the subject-The Paris Agreement and what it aims to achieve. It states that it requires the nations to limit global warming to 2°C by 2100 and try to limit the rise in global temperature to 1.5°C. S follows R. It uses the pronoun THIS. It discusses the GOAL set by the Paris Agreement, which has been discussed in R. It states that to achieve the target set by the Paris Climate Agreement, human-caused carbon dioxide (CO<sub>2</sub>) emissions should become zero by 2070 and become negative afterwards. Q follows S. It begins with the conjunction HOWEVER, which is used to link contrasting statements. It talks about the findings of a study, which states that the current system of carbon taxes is inadequate. P and T form a pair. P talks about how there is a need for putting a price on emissions and incentivisation of strategies that reduce CO<sub>2</sub> in the atmosphere. T states that incentives will lead to the implementation of these strategies at a commercial scale.

**24.** Which of the following would be the FIFTH statement after rearrangement?

A -

P

B -

R

C -

Q

D -

S

E -

T

## Solution

(e) is the right answer. RSQPT is the correct sequence. R begins the passage by establishing the subject-The Paris Agreement and what it aims to achieve. It states that it requires the nations to limit global warming to 2°C by 2100 and try to limit the rise in global temperature to 1.5°C. S follows R. It uses the pronoun THIS. It discusses the GOAL set by the Paris Agreement, which has been discussed in R. It states that to achieve the target set by the Paris Climate Agreement, human-caused carbon dioxide (CO<sub>2</sub>) emissions should become zero by 2070 and become negative afterwards. Q follows S. It begins with the conjunction HOWEVER, which is used to link contrasting statements. It talks about the findings of a study, which states that the current system of carbon taxes is inadequate. P and T form a pair. P talks about how there is a need for putting a price on emissions and incentivisation of strategies that reduce CO<sub>2</sub> in the atmosphere. T states that incentives will lead to the implementation of these strategies at a commercial scale.

## Reasoning ability

**(25-27)** Directions: Answer the questions based on the information given below:

Eight persons, P through W are sitting around a circular table. Number of persons facing the centre is less than those who are facing away from the centre.

U is sitting 3<sup>rd</sup> to the right of Q and both of them are facing the same direction. V is sitting 2<sup>nd</sup> to the right of U. One person is sitting between V and W. Immediate neighbors of W are facing the opposite direction of W. T is sitting 3<sup>rd</sup> to the left of W. One person is sitting between R and P. Immediate neighbors of S are facing the opposite direction of S. R and T are facing in opposite directions with respect to each other.

25. \_\_\_\_\_ is sitting opposite to R.

A -

Q

B -

T

C -

Either (a) or (b)

D -

W

E -

None of these

### Solution

U is sitting 3<sup>rd</sup> to the right of Q and both of them are facing the same direction, i.e. either facing the centre or away from the centre.

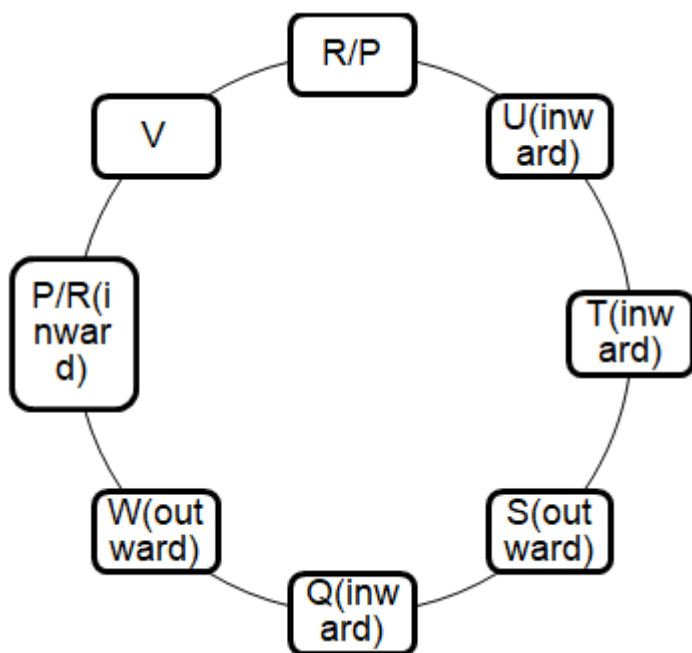
V is sitting 2<sup>nd</sup> to the right of U.

One person is sitting between V and W, Immediate neighbors of W is facing the opposite direction of W.

T is sitting 3<sup>rd</sup> to the left of W.

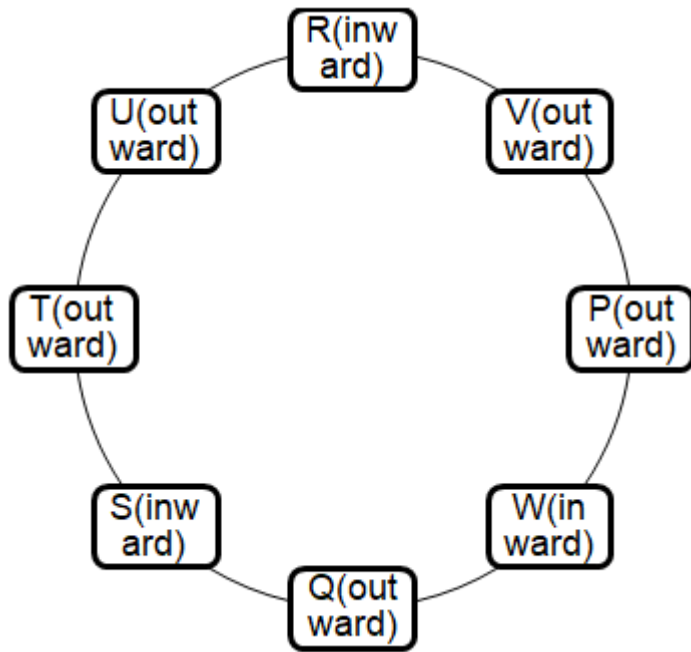
One person is sitting between R and P.

Case 1: When both Q and U are facing the centre. Immediate neighbor of S are facing the opposite direction of S, so this case is not possible.



R and T are facing the opposite direction.

Case 2: When both Q and U are facing away from the centre.



Q is sitting opposite to R.

Hence, option a.

**26.** Find the odd one out?

A -

V

B -

Q

C -

T

D -

S

E -

P

**Solution**

U is sitting 3<sup>rd</sup> to the right of Q and both of them are facing the same direction, i.e. either facing the centre or away from the centre.

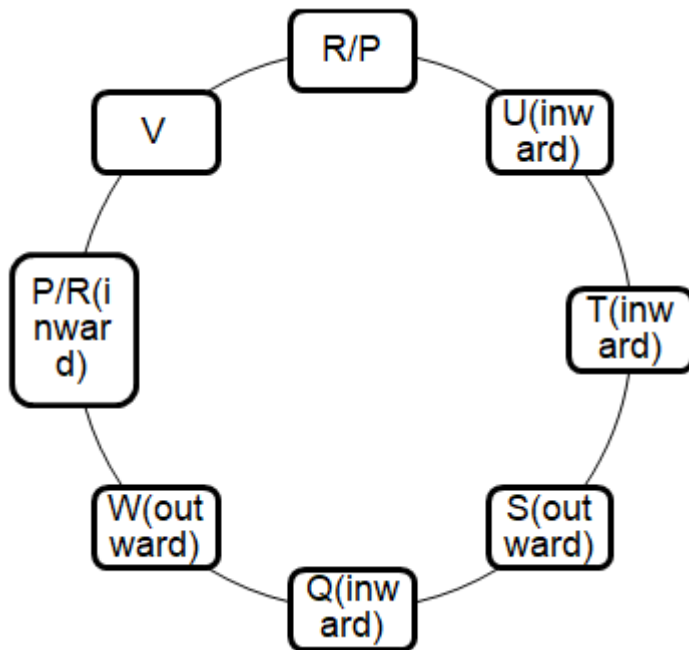
V is sitting 2<sup>nd</sup> to the right of U.

One person is sitting between V and W, Immediate neighbors of W is facing the opposite direction of W.

T is sitting 3<sup>rd</sup> to the left of W.

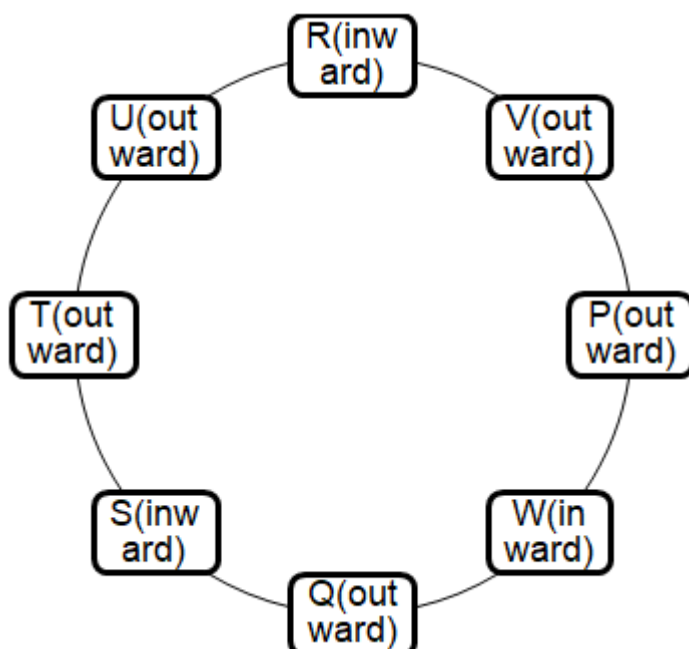
One person is sitting between R and P.

Case 1: When both Q and U are facing the centre. Immediate neighbor of S are facing the opposite direction of S, so this case is not possible.



R and T are facing the opposite direction.

Case 2: When both Q and U are facing away from the centre.



All of them are facing away from the centre, except S.

Hence, option d.

**27.** How many persons are sitting between T and V, when counted from the right of V?

A -

3

B -

2

C -

4

D -

1

E -

None of these

### **Solution**

U is sitting 3<sup>rd</sup> to the right of Q and both of them are facing the same direction, i.e. either facing the centre or away from the centre.

V is sitting 2<sup>nd</sup> to the right of U.

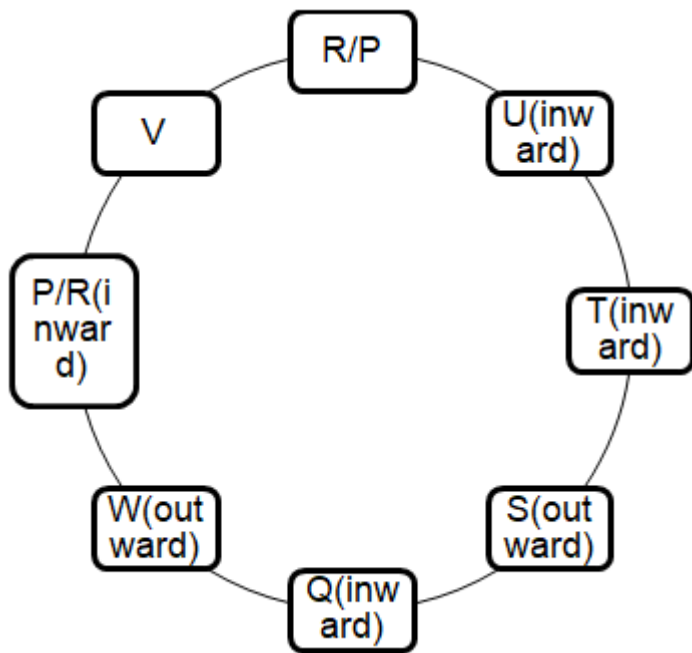
One person is sitting between V and W, Immediate neighbors of W is facing the opposite direction of W.

T is sitting 3<sup>rd</sup> to the left of W.

One person is sitting between R and P.

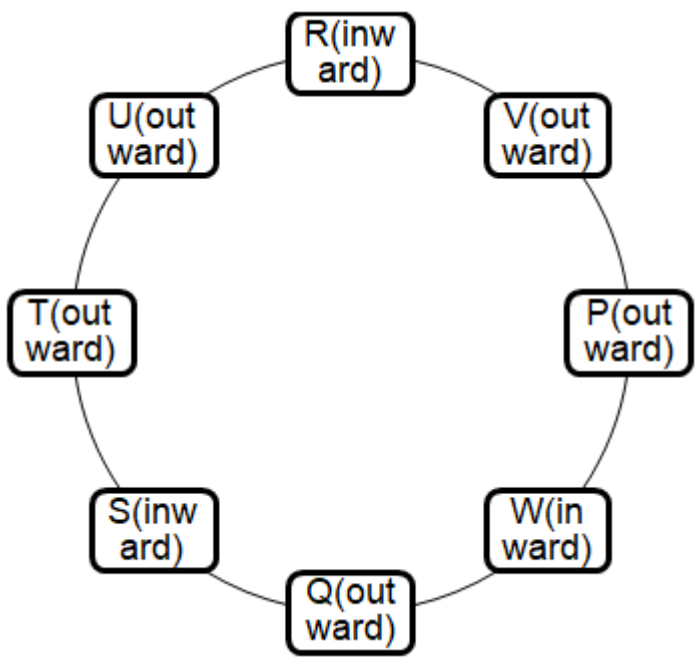
Case 1: When both Q and U are facing the centre. Immediate neighbor of S are facing the opposite direction of S, so this case is not possible.





R and T are facing the opposite direction.

Case 2: When both Q and U are facing away from the centre.



4 persons are sitting between T and V, when counted from the right of V.

Hence, option c.

**(28-29)** Directions: Answer the questions based on the information given below:

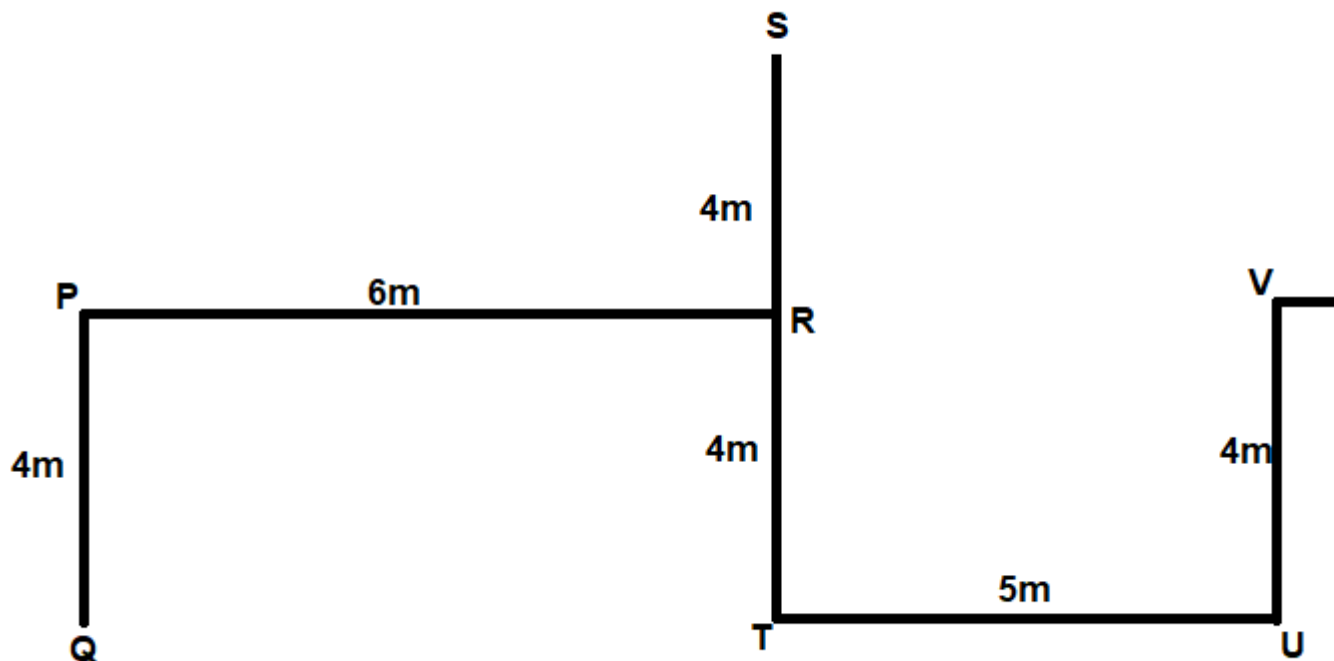
Eight persons are sitting at some distance from each other. Q is sitting 4m south to P, who is sitting 6m west to R, who is sitting in the middle of S and T. W is sitting 3m east to V, who is sitting 4m north to U, who is sitting 5m east to T. S is sitting 8m in the north of T.

28. What is the direction of R with respect to W?

- A - East
- B - West
- C - North east
- D - North west
- E - None of these

**Solution**

The final arrangement is as follows:



R is in the west of W.

Hence, option b.

29. What is the shortest distance between V and P?

A -

10m

B -

5m

C -

11m

D -

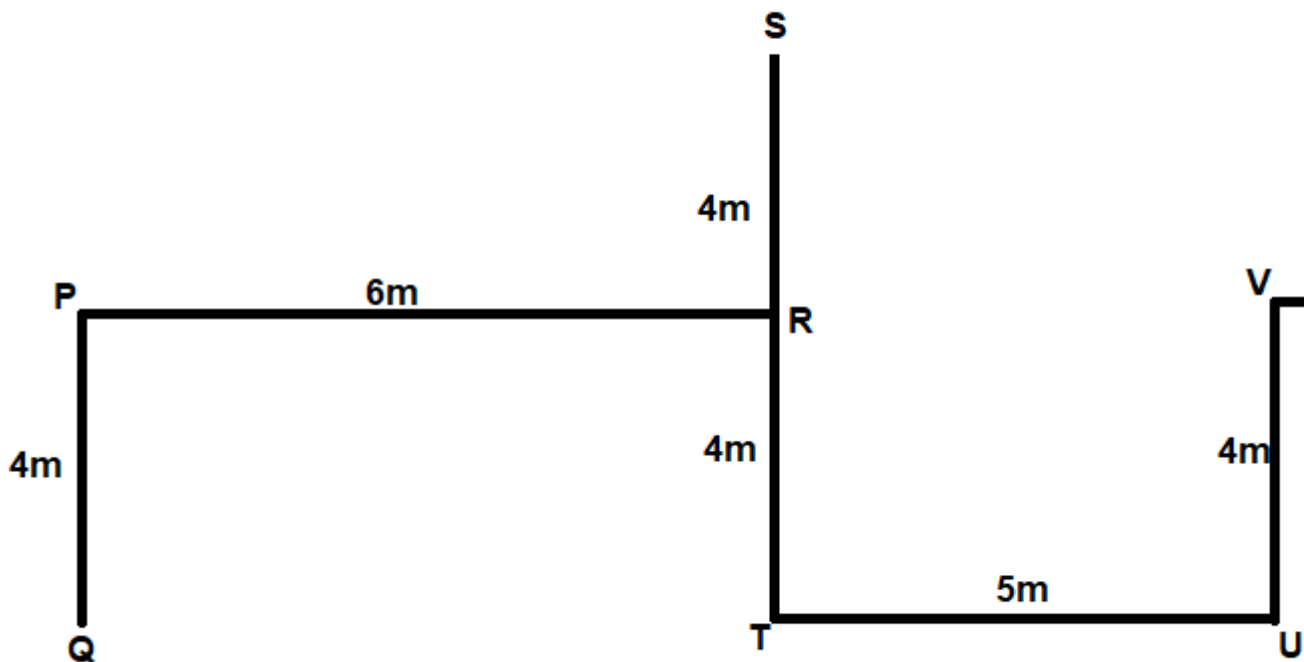
18m

E -

None of these

**Solution**

The final arrangement is as follows:



The shortest distance between V and P is 11m (5+6).

Hence, option c.

**(30-32)** Directions: Answer the questions based on the information given below:

Nine persons, A through I bought nine different cars on different dates, 19<sup>th</sup>, 21<sup>st</sup> and 27<sup>th</sup> of different month, January, February and March of a year. One of the cars is Baleno.

Three persons bought cars between G and E, who didn't buy in the month of 31 days. Neither F nor I bought Porsche. Duster was not bought in February. Two persons bought cars between the persons, who bought Alto and Bolero. Two persons bought the cars between the persons who bought Rexton and Swift. B bought the car just before H and both of them bought the cars in the month of 31 days. G bought the car just after the person, who bought Alto. F didn't buy the car on the 19<sup>th</sup> of any month. Two persons bought the cars between A and C, who bought Rexton. Both A and C bought the car before D, who bought the car just after the person, who bought Audi. Person, who bought i10 didn't buy on 27<sup>th</sup> of any month. One person bought the car between B and F, who didn't buy the car after G.

30. Who among the following bought Duster?

A -

F

B -

I

C -

G

D -

Cannot be determined'

E -

None of these

### **Solution**

Three persons bought cars between G and E, who doesn't bought in the month of 31 days.

G bought the car just after the person, who bought Alto.

Two persons bought cars between the persons, who bought Alto and Bolero.

B bought the car just before H and both of them bought in the month of 31 days.

One person bought the car between B and F.

Case 1:

Days	Persons	Cars
19January		Alto
21January	G	
27January		
19February		Bolero
21February	F	
27February	E	
19March	B	
21March	H	
27March		

F doesn't buy the car after G, so case 1 is not possible.

Case 2:

Days	Persons	Cars
19January	B	
21January	H	
27January	F	

19February	E	Bolero
21February		
27February		
19March		
21March		Alto
27March	G	

Case 3:

Days	Persons	Cars
19January	B	
21January	H	
27January	F	
19February		
21February	E	Bolero
27February		
19March		
21March		Alto
27March	G	

F didn't buy the car on the prime numbered date.

Two persons bought the cars between A and C, who bought Rexton.

Both A and C bought the car before D, who bought the car just after the person, who bought Audi, so case 2 is not possible.

Two persons bought the cars between the persons, who bought Rexton and Swift.

Person, who bought i10 doesn't bought on 27<sup>th</sup> of any month.

Neither F nor I bought Porsche. Duster is not bought in February.

The final arrangement is as follows:

Days	Persons	Cars
19January	B	Swift
21January	H	i10
27January	F	Duster
19February	C	Rexton
21February	E	Bolero
27February	I	Baleno
19March	A	Audi
21March	D	Alto
27March	G	Porsche

F bought Duster.

Hence, option a.

**31.** How many persons bought car after D?

A -

4

B -

1

C -

3

D -

5

E -

None of these

### Solution

Three persons bought cars between G and E, who doesn't bought in the month of 31 days.

G bought the car just after the person, who bought Alto.

Two persons bought cars between the persons, who bought Alto and Bolero.

B bought the car just before H and both of them bought in the month of 31 days.

One person bought the car between B and F.

Case 1:

Days	Persons	Cars
19January		Alto
21January	G	
27January		
19February		Bolero
21February	F	
27February	E	
19March	B	
21March	H	
27March		



F doesn't buy the car after G, so case 1 is not possible.

Case 2:

Days	Persons	Cars
19January	B	
21January	H	
27January	F	
19February	E	Bolero
21February		
27February		
19March		
21March		Alto
27March	G	

Case 3:

Days	Persons	Cars
19January	B	
21January	H	
27January	F	
19February		
21February	E	Bolero
27February		

19March		
21March		Alto
27March	G	

F didn't buy the car on the prime numbered date.

Two persons bought the cars between A and C, who bought Rexton.

Both A and C bought the car before D, who bought the car just after the person, who bought Audi, so case 2 is not possible.

Two persons bought the cars between the persons, who bought Rexton and Swift.

Person, who bought i10 doesn't bought on 27<sup>th</sup> of any month.

Neither F nor I bought Porsche. Duster is not bought in February.

The final arrangement is as follows:

Days	Persons	Cars
19January	B	Swift
21January	H	i10
27January	F	Duster
19February	C	Rexton
21February	E	Bolero
27February	I	Baleno
19March	A	Audi
21March	D	Alto
27March	G	Porsche

Only one person bought car after D.

Hence, option b.

**32. Who bought car just before A?**

A -

I

B -

F

C -

H

D -

D

E -

None of these

**Solution**

Three persons bought cars between G and E, who doesn't bought in the month of 31 days.

G bought the car just after the person, who bought Alto.

Two persons bought cars between the persons, who bought Alto and Bolero.

B bought the car just before H and both of them bought in the month of 31 days.

One person bought the car between B and F.

Case 1:

Days	Persons	Cars
19January		Alto
21January	G	
27January		

19February		Bolero
21February	F	
27February	E	
19March	B	
21March	H	
27March		

F doesn't buy the car after G, so case 1 is not possible.

Case 2:

Days	Persons	Cars
19January	B	
21January	H	
27January	F	
19February	E	Bolero
21February		
27February		
19March		
21March		Alto
27March	G	

Case 3:

Days	Persons	Cars
------	---------	------

19January	B	
21January	H	
27January	F	
19February		
21February	E	Bolero
27February		
19March		
21March		Alto
27March	G	

F didn't buy the car on the prime numbered date.

Two persons bought the cars between A and C, who bought Rexton.

Both A and C bought the car before D, who bought the car just after the person, who bought Audi, so case 2 is not possible.

Two persons bought the cars between the persons, who bought Rexton and Swift.

Person, who bought i10 doesn't bought on 27<sup>th</sup> of any month.

Neither F nor I bought Porsche. Duster is not bought in February.

The final arrangement is as follows:

Days	Persons	Cars
19January	B	Swift
21January	H	i10
27January	F	Duster

19February	C	Rexton
21February	E	Bolero
27February	I	Baleno
19March	A	Audi
21March	D	Alto
27March	G	Porsche

I bought the car just before A.

Hence, option a.

**(33-34)** Directions: Answer the following questions based on the information given below: A % B means A is the wife of B; A @ B means A is the son of B; A \$ B means A is the brother of B; A & B means A is the daughter of B; A \* B means A is the sister of B.

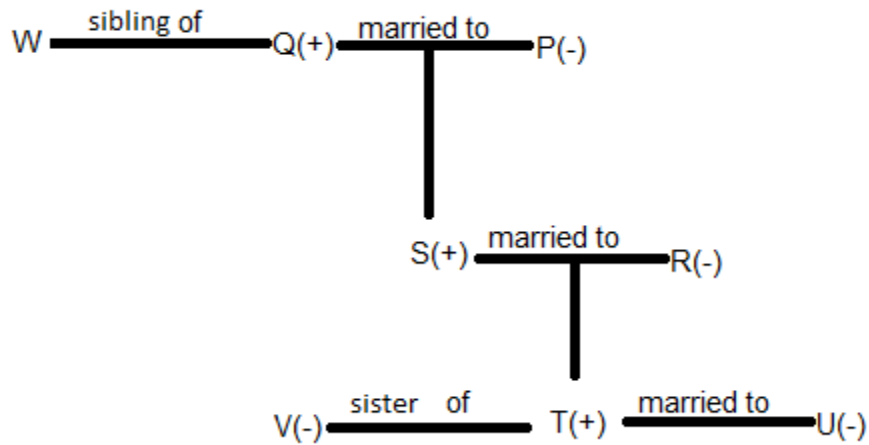
33. U%T\$V&R%S@P%Q\$W, If V is 20years old, what can be the possible age of Q?

- A -  
18 years
- B -  
20 years
- C -  
45 years
- D -  
Either (b) or (c)
- E -  
None of these

**Solution**

The above expression can be decoded as, U is the wife of T, who is brother of V, who is daughter of R, who is wife of S, who is son of P, who is wife of Q, who is brother of W.

The final arrangement is as follows:



So, Q can be 45 years old.

Hence, option c.

**34.** If F is the niece of H, which of the following is false?

A -

G\$F\*E@D%C\$H\*A

B -

F\*D\$E&B%G\$H\$A%C

C -

Both (a) and (b)

D -

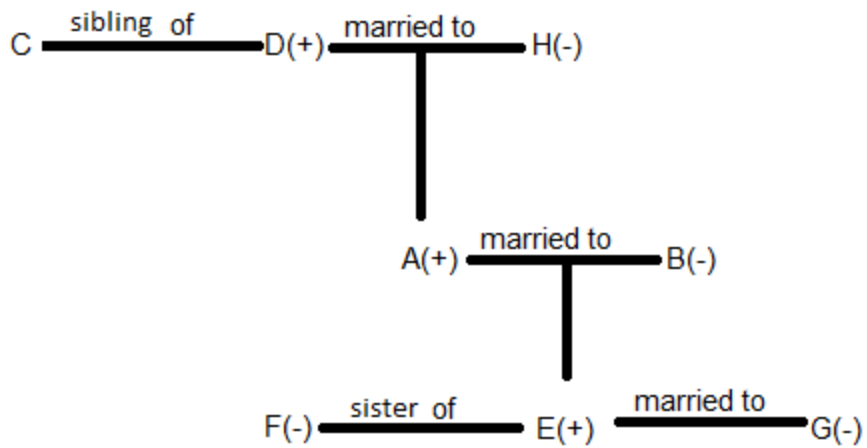
G%E\$F&B%A@H%D\$C

E -

None of these

**Solution**

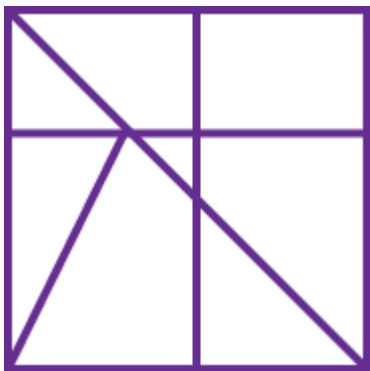
The final arrangement is as follows:



Here, F is not the niece of H.

Hence, option d.

35. How many triangles does the figure have?



A -

5

B -

9

C -

7

D -

10

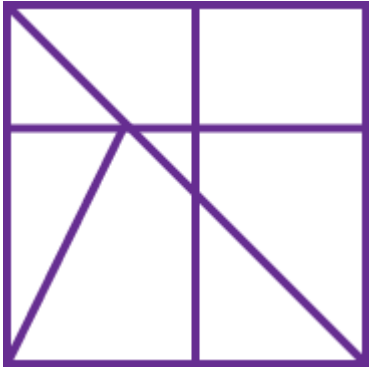
**Solution**

There are 9 triangles in the figure.

Hence, option b.



36. How many triangles does the figure have?



A -

5

B -

9

C -

7

D -

10

**Solution**

There are 9 triangles in the figure.

Hence, option b.

37. Select the term that will come next in the given series.

13, 15, 19, 25, 33, 43, ?, ?

A -

55, 69

B -

54, 68

C -

53, 69

D -

57, 67

**Solution**

Given series:

13, 15, 19, 25, 33, 43

So,  $13+2=15$

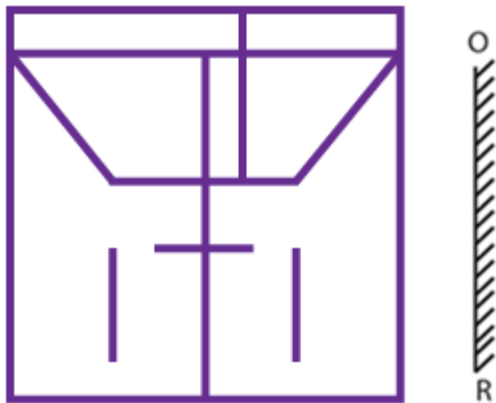
$15+4=19$

$19+6=25$  and so on

So,  $43 + 12 = 55$  and  $55 + 14 = 69$ .

Hence, option a.

**38.** If a mirror is placed on the line OR, then which of the answer figures is the right image of the given figure?



A -



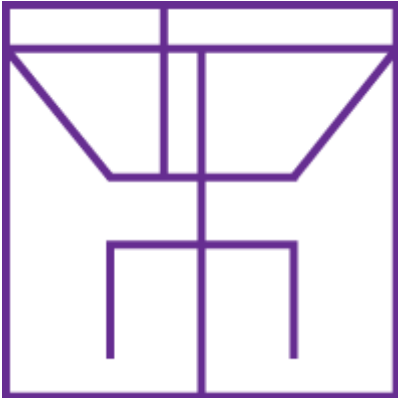
B -



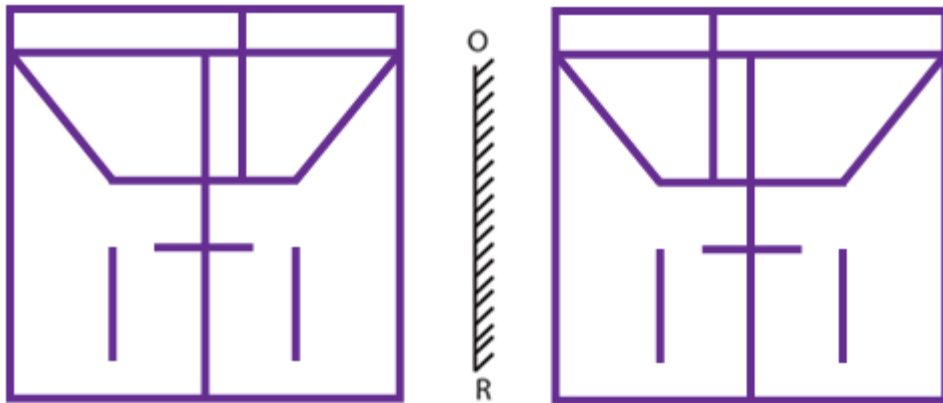
C -



D -



**Solution**



Hence, option b.

**39.** Select the letter-cluster that is related to the third letter-cluster in the same way that the second letter-cluster is related to the first letter-cluster.

ADKN : BELO :: FIGJ : ?

A -  
GKHK

B -  
GHHJ

C -  
GJHK

D -  
GKLM

**Solution**

+1 pattern i.e.  $A+1=B$ ,  $D+1=E$ ,  $K+1=L$ ,  $N+1=O$ .

Similarly, FIGJ : GJHK.

Hence, option c.

**40.** Two statements are given, followed by two conclusions numbered I and II. Assuming the statements to be true, even if they seem to be at variance with

commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

No ground is cricket

All cricket are bat

Conclusions:

I. No ground is bat

II. Some bat are not ground

A -

Only conclusion I follows

B -

Only conclusion II follows

C -

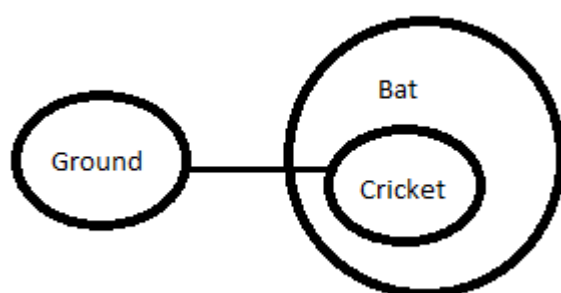
Both the conclusions I and II follow

D -

Neither conclusion I nor II follows

**Solution**

Following figures can be formed from the statements:



There is no direct relation between bat and ground so conclusion I does not follow and some bats are not ground so conclusion II follows.

Hence, option b.

**41.** If you wrote down all the numbers from 1 to 99, then how many times would you have written '8'?

A -  
22

B -  
21

C -  
19

D -  
20

**Solution**

So, if we wrote down all the numbers from 1-99 then,

8, 18, 28, 38, 48, 58, 68, 78, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 98

Hence, option d.

**42.** Select the missing term from the given alternatives.

50	59	89
34	40	?
16	19	21

A -  
76

B -  
68

C -  
97

D -  
77

**Solution**

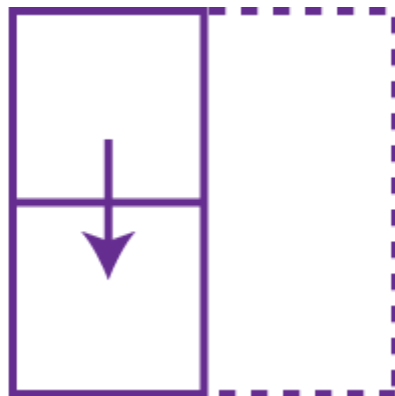
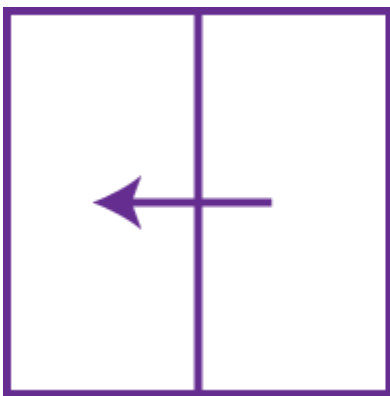
$$34 + 16 = 50.$$

$$40 + 19 = 59.$$

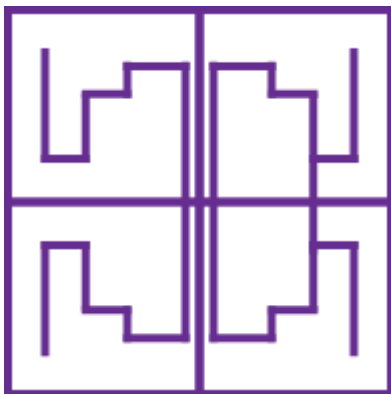
$$68 + 21 = 89.$$

Hence, option b.

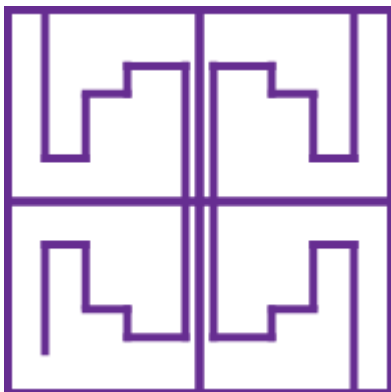
**43.** A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.



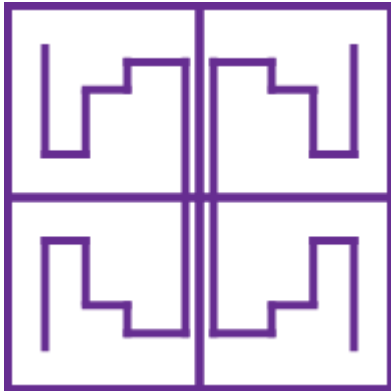
A -



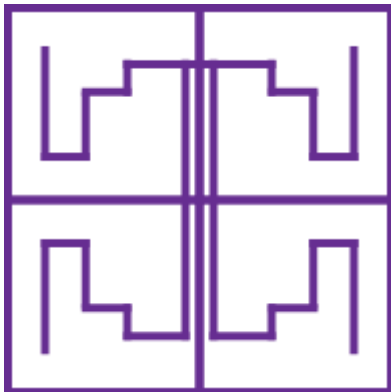
B -



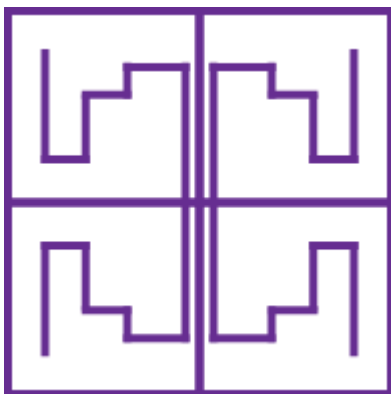
C -



D -



**Solution**



Hence, option c.

**44.** A is the father of N who is the grandson of D. M is daughter of D. D has only two children and only one of them is married. K is the mother in law of P, who is the wife of A. M has a brother.

How is M related to P?

A -

Sister-in-law



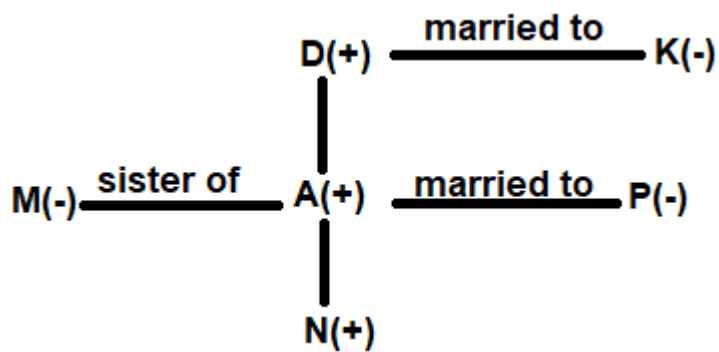
B -  
Father-in-law

C -  
Sister

D -  
Brother

**Solution**

As M and A are siblings and M is female and P is the wife of A so, M is the sister-in-law of P.



Hence, option a.

45. Ayush's birthday is on Saturday 29<sup>th</sup> July. On what day of the week will be Kevin's birthday in the same year if Kevin was born on 12<sup>th</sup> August?

- A -  
Sunday
- B -  
Monday
- C -  
Saturday
- D -  
Tuesday

**Solution**

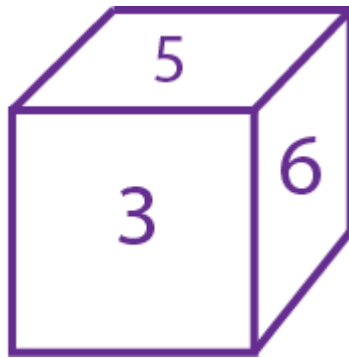
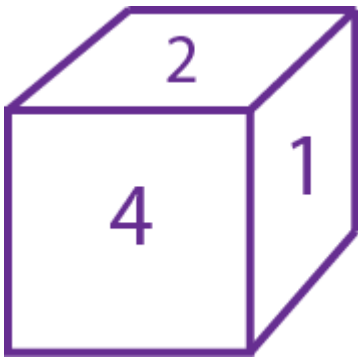
Number of days between two dates i.e. 29<sup>th</sup> July to 12<sup>th</sup> August = 14 days.

No. of odd days = 14/7 Remainder = 0

Day on 12<sup>th</sup> August will be Saturday.

Hence, option c.

**46.** Two positions of the same dice are given, which of the following number will be opposite to 6?



A -

5

B -

4

C -

1

D -

Cannot be determined

### **Solution**

The number opposite to 6 is not determined.

Hence, option d.

**47.** A person moves 12m towards south, then turns right and moves 10m and again turns right and moves 6m. From here, he travels 20m towards the east. Now he turns left and moves 6m.

How far and in which direction is he from his starting point?

A -

10m east

B -

12m east

C -

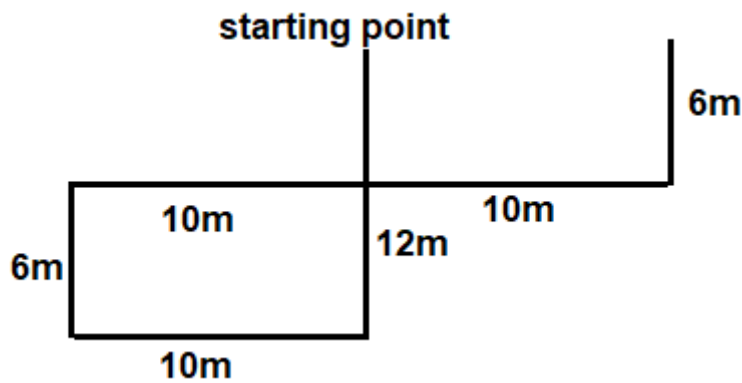
10m west

D -

6m south

**Solution**

He is 10m towards the east with respect to his starting point.



Hence, option a.

**48.** Three of the following four numbers are alike in a certain way and one is different.

A -

14

B -

16

C -

17

D -

20

**Solution**

Except (c), all are even numbers.

Hence, option d.

**49.** In a row of girls, Renu is 14<sup>th</sup> from the left and 23<sup>rd</sup> from the right. How many girls are there in the row?

A -

35

B -

36

C -

37

D -

38

**Solution**

Total number of girl in the row  $14+23-1=36$ .

Hence, option b.

**50.** In a code language, 'APPLICATION' is coded as 'KJRNCFPMKRC' and 'CELEBRATION' is coded as 'DCNCEUPMKRC', then how will 'SUBTRACTION' be coded as?

A -

TRDUSPDMKRE

B -

TRDSUDPMKRE

C -

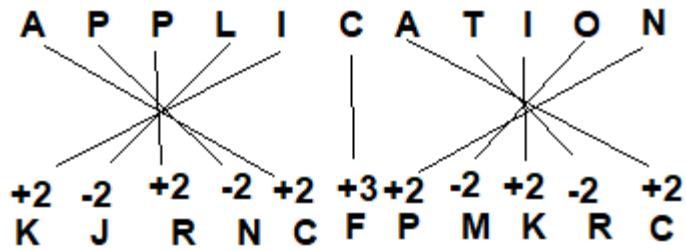
TRSDPDMKRED

D -

TERSPDMKREF

**Solution**

Following figure shows the pattern:



Similarly, SUBTRACTION will be coded as 'TRDSUDPMKRE'.

Hence, option b.

**51.** Arrange the given words according to the dictionary order.

1. Neighbor
2. Network
3. Newly
4. Nature
5. Noise
6. Nearby

A -

4, 6, 1, 2, 3, 5

B -

4, 6, 1, 3, 2, 5

C -

4, 6, 3, 2, 1, 5

D -

4, 3, 6, 2, 1, 5

**Solution**

The words can be arranged

Nature, Nearby, Neighbor, Network, Newly, Noise.

Hence, option a.

**52.** Which two signs should be interchanged to make given equation correct?

$$65 - (70 \div 14) + 50 \times 20 + 10 = 365$$

A -

– and +

B -

– and  $\times$

C -

$\div$  and +

D -

+ and  $\times$

**Solution**

Given equation:

$$65 - (70 \div 14) + 50 \times 20 + 10$$

So, if we interchange – and  $\times$  we get,

$$65 \times (70 \div 14) + 50 - 20 + 10$$

$$65 \times 5 + 40 = 365.$$

Hence, option b.

**53.** If U is coded as 43 and SAT is coded as 81 then how will FOOTBALL be coded?

A -

178

B -

83

C -

167

D -

168

**Solution**

If U is coded as 43 which means the place value of U is  $21 \times 2 + 1 = 43$ .

Similarly, FOOTBALL  $6 + 15 + 15 + 20 + 2 + 1 + 12 + 12 = 83 \times 2 + 1 = 167$ .

Hence, option c.

**54.** Arrange the following words in a logical and meaning order.

1. Himanchal Pradesh

2. India

3. Shimla

4. North India

5. Asia

A -

3, 1, 4, 5, 2

B -

3, 1, 4, 2, 5

C -

3, 1, 2, 4, 5

D -

3, 2, 1, 4, 5

**Solution**

The logical and meaningful order is:

Shimla, Himanchal Pradesh, North India, India, Asia.

Hence, option b.

### **Numerical ability**

**55.** The given table shows the number of SIM cards sold (in thousands) by five different companies in five different years.

	2010	2011	2012	2013	2014
--	------	------	------	------	------

A	24	45	52	64	85
B	44	52	60	36	48
C	52	36	28	40	22
D	42	54	60	44	46
E	18	65	48	56	23

If the data related to number of SIM cards sold by company 'B' is represented by a pie-chart then the central angle of the sector representing the sale of number of SIMs in 2012 will be:

- A -  
45°
- B -  
90°
- C -  
60°
- D -  
120°

### Solution

Total number of SIM cards sold by B in five years =  $(44 + 52 + 60 + 36 + 48) \times 1000 = 240000$

Number of SIM cards sold by B in 2012 = 60000

Required angle =  $(60000/240000) \times 360 = 90^\circ$

Hence, option b.

**56.** A, B and C can complete a work in 18 days, 24 days and 36 days respectively. Find the number of days taken by all of them together to complete 75% of the work together.

- A -  
6 days



B -  
12 days

C -  
5 days

D -  
8 days

**Solution**

Let the total work = LCM of 18, 24 and 36 = 72 units

Efficiency of 'A' =  $72/18 = 4$  units/day

Efficiency of 'B' =  $72/24 = 3$  units/day

Efficiency of 'C' =  $72/36 = 2$  units/day

Time taken by all of them together to complete 75% of the work =  $0.75 \times 72 / (4 + 3 + 2) = 6$  days

Hence, option a.

**57.** The given table shows the number of SIM cards sold (in thousands) by five different companies in five different years.

	2010	2011	2012	2013	2014
A	24	45	52	64	85
B	44	52	60	36	48
C	52	36	28	40	22
D	42	54	60	44	46
E	18	65	48	56	23

The average of number of SIM cards sold in 2010 by all five companies is how much percent more/less than the average number of SIM cards sold in 2013 by all five companies?

A -

32%

B -

40%

C -

25%

D -

18%

**Solution**

Average number of SIM cards sold in 2013 =  $(64 + 36 + 40 + 44 + 56)/5 \times 1000 = 48000$

Average number of SIM cards sold in 2010 =  $(24 + 44 + 52 + 42 + 18)/5 \times 1000 = 36000$

Required percentage =  $\{(48000 - 36000)/48000\} \times 100 = 25\%$

Hence, option c.

**58.** A person sells an article at 12% loss. If he had purchased the article for 20% less and sold it for Rs. 24 more, then he would have gained 12%. Find the original cost price of the article.

A -

Rs. 2500

B -

Rs. 1800

C -

Rs. 1200

D -

Rs. 1500

**Solution**

Let the cost price of the article be Rs. 'x'

Therefore, selling price of the article = Rs. 0.88x

The new cost price of the article be Rs. 0.80x

Therefore, new selling price of the article = Rs.  $0.896x$

According to the question,

$$0.896x - 0.88x = 24$$

$$\text{Or, } 0.016x = 24$$

$$\text{Or, } x = 24/0.016 = \text{Rs. } 1500$$

Hence, option d.

**59.** The altitude of an equilateral triangle is  $5\sqrt{3}$  cm. Find the area of the equilateral triangle.

A -

$$32\sqrt{3} \text{ cm}^2$$

B -

$$25\sqrt{3} \text{ cm}^2$$

C -

$$30\sqrt{3} \text{ cm}^2$$

D -

$$18\sqrt{3} \text{ cm}^2$$

**Solution**

Let each side of the equilateral triangle be 'a' cm

$$\text{Therefore, } (a^2 - a^2/4) = (5\sqrt{3})^2$$

$$\text{Or, } 3a^2/4 = 75$$

$$\text{Or, } a^2 = 100$$

$$\text{Or, } a = 10 \text{ cm}$$

$$\text{Or, area of the equilateral triangle} = (\sqrt{3} \times 100)/4 = 25\sqrt{3} \text{ cm}^2$$

Hence, option b.

**60.** If  $1/(\operatorname{cosec} x - 1) + 1/(\operatorname{cosec} x + 1) = 2\sec x$ , then find the value of  $\tan x + \operatorname{cosec} x$ .

A -  
 $1/\sqrt{2}$

B -  
 $(1 + \sqrt{2})$

C -  
 $(1 + 2\sqrt{2})$

D -  
 $(\sqrt{2} + 2\sqrt{2})$

**Solution**

Given,

$$1/(\operatorname{cosec}x - 1) + 1/(\operatorname{cosec}x + 1) = 2\operatorname{sec}x$$

$$\text{Or, } 2\operatorname{cosec}x/(\operatorname{cosec}^2x - 1) = 2\operatorname{sec}x$$

$$\text{Or, } 2\operatorname{cosec}x/\cot^2x = 2\operatorname{sec}x$$

$$\text{Or, } \tan x = 1$$

$$\text{Or, } \tan x = \tan 45^\circ$$

$$\text{Or, } x = 45^\circ$$

$$\text{Therefore, } \tan x + \operatorname{cosec}x = \tan 45^\circ + \operatorname{cosec} 45^\circ = (1 + \sqrt{2})$$

Hence, option b.

**61.** The given table shows the number of SIM cards sold (in thousands) by five different companies in five different years.

	2010	2011	2012	2013	2014
A	24	45	52	64	85
B	44	52	60	36	48
C	52	36	28	40	22
D	42	54	60	44	46

E	18	65	48	56	23
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What is the ratio of total number of SIM cards sold by company 'A' to that by company 'E', in all the five years?

A -  
9:7

B -  
12:5

C -  
5:3

D -  
7:4

**Solution**

Total number of SIM cards sold by Company 'A' =  $(24 + 45 + 52 + 64 + 85) \times 1000 = 270000$

Total number of SIM cards sold by Company 'E' =  $(18 + 65 + 48 + 56 + 23) \times 1000 = 210000$

Required ratio =  $270000:210000 = 9:7$

Hence, option a.

**62.** If  $3889y8916x$  is divisible by 45, then find the value of  $(5x - 2y)$ .

A -  
31

B -  
13

C -  
24

D -  
18

**Solution**

Since, the number is divisible by 45 therefore it has to be divisible by 5 and 9

For the number to be divisible by 5,  $x = 0$  or  $x = 5$

For the number to be divisible by 9, the sum of the digits of the number has to be divisible by 9

At  $x = 0$  the value of  $y = 2$

At  $x = 5$  the value of  $y = 6$

Therefore,  $(5x - 2y) = \{(5 \times 0) - (2 \times 2)\} = -4$

Also,  $(5x - 2y) = \{(5 \times 5) - (2 \times 6)\} = 13$

Hence, option b.

**63.** There is a hollow cylinder of height 4 m and radius equals to 14 cm. Some amount of metal is coated on its outer side such that the thickness of metal coated is 7 cm. If the weight of  $1 \text{ cm}^3$  of the metal is 3.5 gm, then find the weight of the metal coated.

A -

1136 kg

B -

1078 kg

C -

1048 kg

D -

1186 kg

**Solution**

Inner radius of the cylinder ( $r$ ) = 14 cm

Outer radius of the cylinder ( $R$ ) =  $(14 + 7) = 21$  cm

Height of the cylinder ( $h$ ) = 4 m = 400 cm

Volume of the metal used =  $\pi(R^2 - r^2)h = \pi(21^2 - 14^2) \times 400 = 98000\pi \text{ cm}^3$

Therefore, weight of the metal coated =  $98000\pi \times 3.5 = 1078$  kg

Hence, option b.

**64.** Vikash spends 75% of his income. If his income increases by 20% and the saving decreases by 10%, then find the percentage increase/decrease in his expenditure.

A -

38.75%

B -

30%

C -

25%

D -

20%

**Solution**

Let the income of Vikash be Rs.  $x$

Therefore, his expenditure = Rs.  $0.75x$

His savings =  $(x - 0.75x) = \text{Rs. } 0.25x$

According to the question,

New income of Vikash = Rs.  $1.20x$

His savings =  $0.90 \times 0.25x = \text{Rs. } 0.225x$

His expenditure =  $(1.20x - 0.225x) = \text{Rs. } 0.975x$

Required percentage =  $\{(0.975x - 0.75x)/0.75\} \times 100 = 30\%$

Hence, option b.

**65.** The given table shows the number of SIM cards sold (in thousands) by five different companies in five different years.

	2010	2011	2012	2013	2014
A	24	45	52	64	85
B	44	52	60	36	48

C	52	36	28	40	22
D	42	54	60	44	46
E	18	65	48	56	23

Find the difference between total number of SIM cards sold in 2012 and the total number of SIM cards sold by company 'D' in all five years.

A -  
2000

B -  
2400

C -  
1800

D -  
1500

**Solution**

Total number of SIM cards sold in 2012 =  $(52 + 60 + 28 + 60 + 48) \times 1000 = 248000$

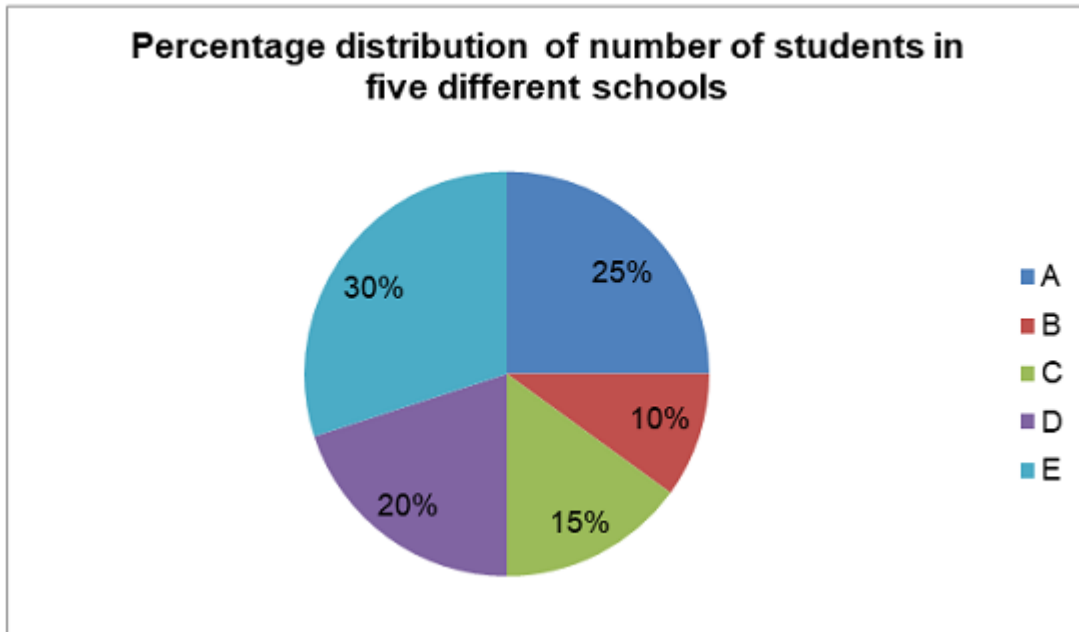
Total number of SIM cards sold by company 'D' =  $(42 + 54 + 60 + 44 + 46) \times 1000 = 246000$

Required difference =  $248000 - 246000 = 2000$

Hence, option a.

**66.** The given pie chart shows the percentage distribution of number of students in five different schools.





The number of students in school 'D' is how much percent more/less than the number of students in school 'A'?

- A -  
25%
- B -  
15%
- C -  
20%
- D -  
30%

**Solution**

Required percentage =  $\{(25 - 20)/25\} \times 100 = 20\%$

Hence, option c.

**67.** A certain sum when invested at 20% p.a. simple interest for 5 years amounts to Rs. 4800. Find the amount received when the interest received on the sum is invested at 25% p.a. compound interest, compounded annually.

- A -  
Rs. 3060
- B -

Rs. 3750

C -

Rs. 3120

D -

Rs. 3380

**Solution**

Let the sum invested at simple interest be Rs.  $x$

Therefore,  $(x \times 20 \times 5)/100 + x = 4800$

Or,  $2x = 4800$

Or,  $x = \text{Rs. } 2400$

Therefore, interest received =  $4800 - 2400 = \text{Rs. } 2400$

Amount received at compound interest =  $2400(1 + 25/100)^2 = \text{Rs. } 3750$

Hence, option b.

**68.** An article is marked up by 25% and a discount of Rs. 300 is offered on it. If the profit earned on the article is Rs. 150, then find the cost price of the article.

A -

Rs. 1200

B -

Rs. 1500

C -

Rs. 1600

D -

Rs. 1800

**Solution**

Let the cost price of the article be Rs.  $x$

Therefore, marked price of the article = Rs.  $1.25x$

Selling price of the article = Rs.  $(1.25x - 300)$

Selling price of article at Rs. 150 profit = Rs.  $(x + 150)$

Therefore,  $1.25x - 300 = x + 150$

Or,  $0.25x = 450$

Or,  $x = 450/0.25 = \text{Rs. } 1800$

Hence, option d.

**69.** If  $(x - 5)^3 + (x - 4)^3 + (x - 3)^3 = 3(x - 5)(x - 4)(x - 3)$  then find the value of  $(x^2 + 2x + 6)$

A -

30

B -

35

C -

50

D -

45

**Solution**

Let  $a = (x - 5)$ ,  $b = (x - 4)$  and  $c = (x - 3)$

According to the question,

$$a^3 + b^3 + c^3 = 3abc$$

Therefore,  $a + b + c = 0$

$$\text{Or, } x - 5 + x - 4 + x - 3 = 0$$

$$\text{Or, } 3x = 12$$

$$\text{Or, } x = 4$$

$$\text{Therefore, } x^2 + 2x + 6 = 4^2 + 2 \times 4 + 6 = 30$$

Hence, option a.

**70.** The ratio of present ages of Neeti and Neha is 7:5, respectively. 10 years hence, the age of Neeti will be 20% more than that of Neha. Find the sum of present ages of Neeti and Neha.

A -  
18 years

B -  
25 years

C -  
24 years

D -  
20 years

**Solution**

Let the present ages of Neeti and Neha be  $7x$  years and  $5x$  years respectively

According to the question,

$$(7x + 10) = 1.2(5x + 10)$$

Or,  $x = 2$  years

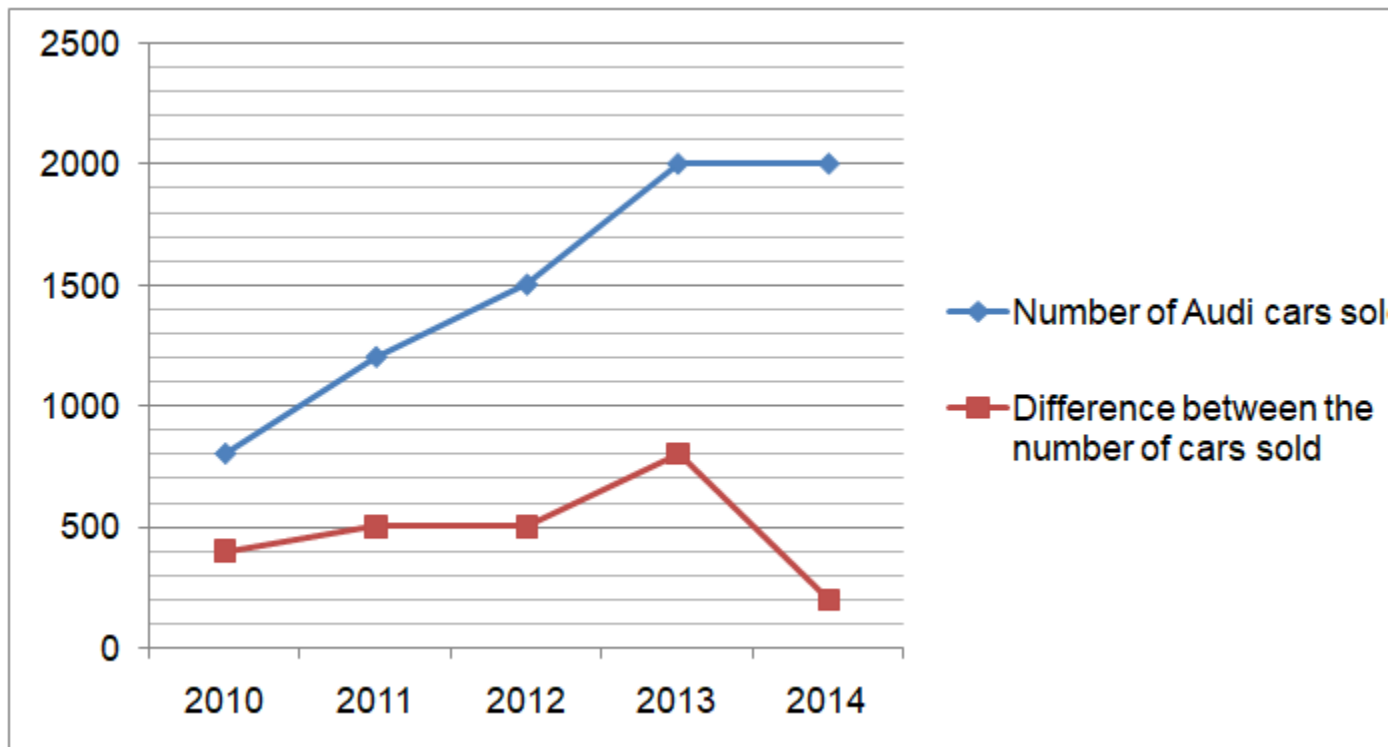
Therefore, required sum =  $7x + 5x = 12x = 24$  years

Hence, option c.

**(71-74)** Directions: Answer the questions based on the information given below.

Different showroom owners in Delhi sell cars of various companies. The data given is about cars of only two companies. The given line graph shows the total number of Audi cars sold and the difference between the number of Audi cars and BMW cars sold in five different years in Delhi.

Difference between the number of cars sold = Number of Audi cars sold – Number of BMW cars sold.



71. What is the average number of BMW cars sold in 2010, 2011 and 2012 in Delhi?

- A - 700
- B - 500
- C - 850
- D - 600
- E - None of these

**Solution**

The number of Audi cars sold in 2010 = 800

Number of Audi cars sold in 2010 – number of BMW cars sold in 2010 = 400

Number of BMW cars sold in 2010 = number of Audi cars sold in 2010 – (number of Audi cars sold – number of BMW cars sold) = 800 – 400 = 400.

Similarly,

Year	Number of Audi cars sold	Number of BMW cars sold	Total number of cars sold
2010	800	400	1200
2011	1200	700	1900
2012	1500	1000	2500
2013	2000	1200	3200
2014	2000	1800	3800

Required average =  $(400 + 700 + 1000)/3 = 700$

Hence, option a.

**72.** The average number of Audi, BMW and Jaguar cars sold in Delhi in 2013 was 1400. What is the ratio of the number of Audi cars sold to that of jaguar cars sold in Delhi in 2013?

A -

3:2

B -

5:4

C -

4:3

D -

4:5

E -

None of these

**Solution**

The number of Audi cars sold in 2010 = 800

Number of Audi cars sold in 2010 – number of BMW cars sold in 2010 = 400

Number of BMW cars sold in 2010 = number of Audi cars sold in 2010 – (number of Audi cars sold – number of BMW cars sold) = 800 – 400 = 400.

Similarly,

Year	Number of Audi cars sold	Number of BMW cars sold	Total number of cars sold
2010	800	400	1200
2011	1200	700	1900
2012	1500	1000	2500
2013	2000	1200	3200
2014	2000	1800	3800

Number of Jaguar cars sold in 2013 =  $3 \times 1400 - (2000 + 1200) = 4200 - 3200 = 1000$

Required ratio = 2000:1000 = 2:1

Hence, option e.

**73.** There are only three showrooms A, B and C in Delhi in 2014 which sell BMW cars. The number of BMW cars sold by B is 15% more than that of A. The respective ratio of the number of BMW cars sold by A to that of C is 20:17. Find the number of BMW cars sold by B.

A -  
540

B -  
690

C -  
740

D -  
910

E -

None of these

**Solution**

The number of Audi cars sold in 2010 = 800

Number of Audi cars sold in 2010 – number of BMW cars sold in 2010 = 400

Number of BMW cars sold in 2010 = number of Audi cars sold in 2010 –  
(number of Audi cars sold – number of BMW cars sold) = 800 – 400 = 400.

Similarly,

Year	Number of Audi cars sold	Number of BMW cars sold	Total number of cars sold
2010	800	400	1200
2011	1200	700	1900
2012	1500	1000	2500
2013	2000	1200	3200
2014	2000	1800	3800

Let the number of BMW cars sold by A and C be  $20x$  and  $17x$ , respectively.

Therefore, number of BMW cars sold by B =  $1.15 \times 20x = 23x$

According to the question,

$$20x + 23x + 17x = 1800$$

$$\text{Or, } 60x = 1800$$

$$\text{Or, } x = 30$$

Therefore, number of BMW cars sold by B =  $23x = 690$

Hence, option b.

**74.** The number of Audi cars sold in 2012 is how much percent more/less than that of number of BMW cars sold in 2013?



A -  
15%

B -  
35%

C -  
25%

D -  
20%

E -  
None of these

**Solution**

The number of Audi cars sold in 2010 = 800

Number of Audi cars sold in 2010 – number of BMW cars sold in 2010 = 400

Number of BMW cars sold in 2010 = number of Audi cars sold in 2010 –  
(number of Audi cars sold – number of BMW cars sold) = 800 – 400 = 400.

Similarly,

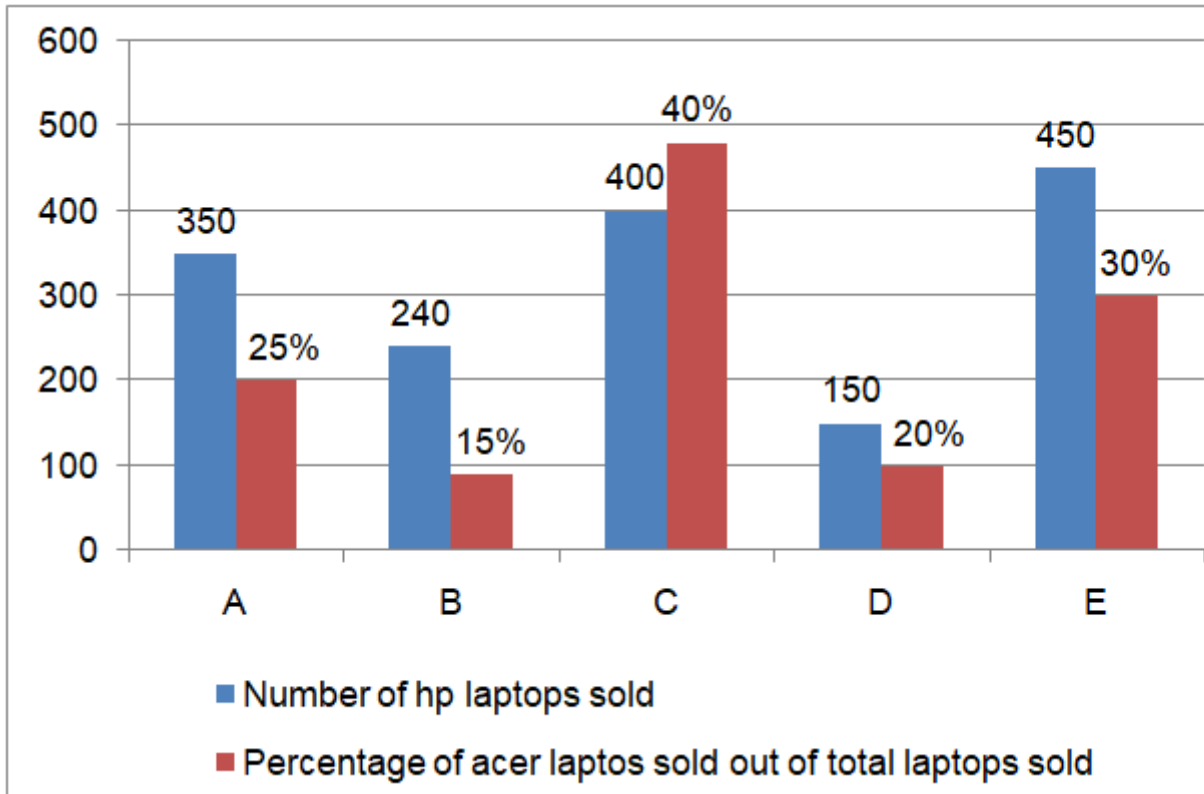
Year	Number of Audi cars sold	Number of BMW cars sold	Total number of cars sold
2010	800	400	1200
2011	1200	700	1900
2012	1500	1000	2500
2013	2000	1200	3200
2014	2000	1800	3800

Required percentage =  $\{(1500 - 1200)/1200\} \times 100 = 25\%$

Hence, option c.

**(75-76)** Directions: Answer the questions based on the information given below.

The given bar graph shows the number of hp laptops sold and the percentage of acer laptops sold out of three types of laptops (hp, acer and lenovo) sold by five different stores.



The given table shows the ratio of the number of Lenovo laptops sold to hp laptops sold by five different stores.

Store	Number of Lenovo laptops sold: Number of hp laptops sold
A	5:7
B	9:8
C	4:5
D	5:3
E	5:9

75. What is the ratio of the number of Lenovo laptops sold by store A to the number of Acer laptops sold by store E?

A -

4:5

B -

5:6

C -

3:5

D -

1:2

E -

None of these

**Solution**

Store	Number of hp laptops sold	Number of Lenovo laptops sold	Total laptops sold	Number of Acer laptops sold
A	350	$350 \times \frac{5}{7} = 250$	$(350 + 250)/0.75 = 800$	$800 - (350 + 250) = 200$
B	240	$240 \times \frac{9}{8} = 270$	$(240 + 270)/0.85 = 600$	$600 - (240 + 270) = 90$
C	400	$400 \times \frac{4}{5} = 320$	$(400 + 320)/0.60 = 1200$	$1200 - (400 + 320) = 480$
D	150	$150 \times \frac{5}{3} = 250$	$(150 + 250)/0.80 = 500$	$500 - (150 + 250) = 100$

E	450	$450 \times \frac{5}{9} = 250$	$(450 + 250)/0.70 = 1000$	$1000 - (450 + 250) = 300$
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Required ratio = 250:300 = 5:6

Hence, option b.

**76.** If  $\frac{1}{3}^{\text{rd}}$  of the total acer laptops sold by store B were defective, then find the number of non-defective acer laptops sold by store B.

A -

40

B -

80

C -

30

D -

20

E -

None of these

### Solution

Store	Number of hp laptops sold	Number of Lenovo laptops sold	Total laptops sold	Number of Acer laptops sold
A	350	$350 \times \frac{5}{7} = 250$	$(350 + 250)/0.75 = 800$	$800 - (350 + 250) = 200$
B	240	$240 \times \frac{9}{8} = 270$	$(240 + 270)/0.85 = 600$	$600 - (240 + 270) = 90$

C	400	$400 \times \frac{4}{5} = 320$	$(400 + 320)/0.60 = 1200$	$1200 - (400 + 320) = 480$
D	150	$150 \times \frac{5}{3} = 250$	$(150 + 250)/0.80 = 500$	$500 - (150 + 250) = 100$
E	450	$450 \times \frac{5}{9} = 250$	$(450 + 250)/0.70 = 1000$	$1000 - (450 + 250) = 300$

Required number =  $90 \times \frac{2}{3} = 60$

Hence, option e.

**77.** The question consists of two statements numbered “I and II” given below it. You have to decide whether the data provided in the statements are sufficient to answer the question.

Both the digits of a two digit number are same. Find the sum of the digits.

Statement I: The difference between the two digits is 0.

Statement II: When the number is increased by 20, then the original number becomes 31.25% less than the increased number.

A -

The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

B -

The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.

C -

The data either in statement I alone or in statement II alone are sufficient to answer the question.

D -

The data given in both statements I and II together are not sufficient to answer the question.

E -

The data in both statements I and II together are necessary to answer the question.

### **Solution**

Let the unit and ten's digit of the number be  $y$  and  $x$ , respectively.

So, original number =  $10x + y$

From statement I:

$$x - y = 0$$

So, data in statement I alone is not sufficient to answer the question.

From statement II:

$$20/(10x + y + 20) = 0.3125$$

$$\text{Or, } 20/0.3125 = 10x + y + 20$$

$$\text{Or, } 10x + y = 64 - 20 = 44$$

Therefore, sum of the digits =  $4 + 4 = 8$

So, data in statement II alone is sufficient to answer the question.

Therefore, data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.

Hence, option b.

**78.** The question consists of two statements numbered "I and II" given below it. You have to decide whether the data provided in the statements are sufficient to answer the question.

The savings of A is Rs. 12800. Find the income of B.

Statement I: A and B, each spends 20% of their income on food and 60% of remaining on other items.

Statement II: The expenditure of B on food is 75% of the savings of A.

A -

The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

B -

The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.

C -

The data either in statement I alone or in statement II alone are sufficient to answer the question.

D -

The data given in both statements I and II together are not sufficient to answer the question.

E -

The data in both statements I and II together are necessary to answer the question.

### **Solution**

Let the income of B be Rs.  $x$

From statement I:

Expenditure of B on food = Rs.  $0.20x$

So, data in statement I alone is not sufficient to answer the question.

From statement II:

Expenditure of B on food =  $0.75 \times 12800 = \text{Rs. } 9600$

So, data in statement II alone is not sufficient to answer the question.

Combining statement I and II:

$$0.20x = 9600$$

$$\text{Or, } x = 9600/0.20 = \text{Rs. } 48000$$

Therefore, data in both statements I and II together are necessary to answer the question.

Hence, option e.

**79.** 23.89 litres of mixture X of milk and water is mixed with mixture Y of milk and water such that the ratio of the milk to water in the final mixture becomes 5:11. If the quantity of milk and water in mixture Y is 6.68 litres and 25.23 litres more than the respective quantity of milk and water of mixture X, then find the approximate quantity of water in mixture Y.

A -  
100 litres

B -  
20 litres

C -  
80 litres

D -  
40 litres

E -  
60 litres

### **Solution**

Let the approximate quantity of milk and water in mixture X be  $a$  litres and  $b$  litres, respectively.

Let the approximate quantity of milk and water in the mixture Y be  $(a + 7)$  litres and  $(b + 25)$  litres, respectively.

According to the question,

$$(a + a + 7)/(b + b + 25) \sim 5/11$$

$$(2a + 7)/(2b + 25) \sim 5/11$$

$$\text{Or, } 22a - 10b \sim 48 \dots (1)$$

$$\text{Also, } a + b \sim 24 \dots (2)$$

On solving equation (1) and (2), we get

$$a = 9 \text{ litres and } b = 15 \text{ litres}$$

So, approximate quantity of water in mixture Y =  $15 + 25 = 40$  litres.

Hence, option d.

**80.** What will come in place of the question mark (?) in the following series?

364, 304, 254, 214, 184, ?

A -  
104



B -  
134

C -  
172

D -  
154

E -  
164

**Solution**

$$364 - 60 = 304$$

$$304 - 50 = 254$$

$$254 - 40 = 214$$

$$214 - 30 = 184$$

$$184 - 20 = 164$$

Therefore, the missing number is 164.

Hence, option e.