Wipro Elite NTH Aptitude Questions and Answers - Paper 2

1. 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^{o}

B - 90^{o}

C - 60^{o}

D - 120^{o}

Solution

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

Number of SIM cards sold by B in 2012 = 60000

Required angle = (60000/240000) × 360 = 90^{o}

Hence, option b.

2. 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 × 72/(4 + 3 + 2) = 6 days

Hence, option a.

3. 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 × 1000 = 48000

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

Required percentage = {(48000 – 36000)/48000} × 100 = 25%

Hence, option c.

4. 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

Or, 0.016x = 24

Or, x = 24/0.016 = Rs. 1500

Hence, option d.

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

A -
$32\sqrt{3}$ cm^2

B -
$25\sqrt{3}$ cm^2

C -
$30\sqrt{3}$ cm^2

D -
$18\sqrt{3}$ cm^2

Solution

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

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

Or, $3a^2/4 = 75$

Or, $a^2 = 100$

Or, a = 10 cm

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

Hence, option b.

6. If $1/(\text{cosec}x – 1) + 1/(\text{cosec}x + 1) = 2\sec x$, then find the value of $\tan x + \text{cosec}x$.

A -
$1/\sqrt{2}$

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

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

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

Solution

Given,

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

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

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

Or, $\tan x = 1$

Or, $\tan x = \tan 45^\circ$

Or, $x = 45^\circ$

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

Hence, option b.

7. 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

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) × 1000 = 270000

Total number of SIM cards sold by Company ‘E’ = (18 + 65 + 48 + 56 + 23) × 1000 = 210000

Required ratio = 270000:210000 = 9:7

Hence, option a.

8. 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 × 0) – (2 × 2)} = -4

Also, (5x – 2y) = {(5 × 5) – (2 × 6)} = 13

Hence, option b.

9. 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 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 = $\pi(R^2 - r^2)h = \pi(21^2 - 14^2) \times 400 = 98000\pi$ cm^3

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

Hence, option b.

10. 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) = Rs. 0.25x

According to the question,

New income of Vikash = Rs. 1.20x

His savings = 0.90 × 0.25x = Rs. 0.225x

His expenditure = (1.20x – 0.225x) = Rs. 0.975x

Required percentage = {(0.975x – 0.75x)/0.75} × 100 = 30%

Hence, option b.

11. 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

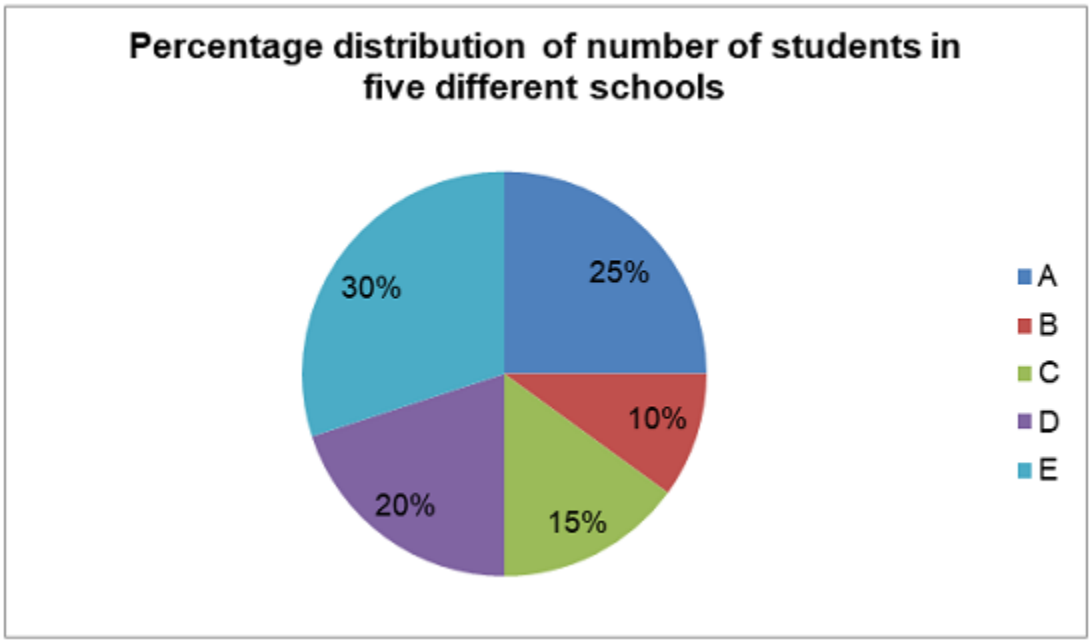
Total number of SIM cards sold in 2012 = (52 + 60 + 28 + 60 + 48) × 1000 = 248000

Total number of SIM cards sold by company ‘D’ = (42 + 54 + 60 + 44 + 46) × 1000 = 246000

Required difference = 248000 – 246000 = 2000

Hence, option a.

12. 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} × 100 = 20%

Hence, option c.

13. 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 invested be Rs. x

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

Or, $2x = 4800$

Or, $x =$ Rs. 2400

Therefore, interest received = 4800 – 2400 = Rs. 2400

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

Hence, option b.

14. 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 = Rs. 1800

Hence, option d.