Linear Equations Questions for NMAT

Instructions

For the following questions answer them individually

Question 1

In 1 kg of a mixture of sand and iron, 20% is iron .How such sand should be added so that the proportion of iron becomes 10%

A 1 kg

B 200gm

C 800 gm

D 1.8 kg

E None of these

Answer: A

Explanation:

Total mixture of sand and iron = 1 kg

Quantity of iron = $\frac{20}{100} \times 1 = 0.2$ kg

Let x kg of sand should be added, thus total iron in the mixture

=> $0.2 = \frac{10}{100} \times (x + 1)$

=> $2 = x + 1$

=> $x = 2 - 1 = 1$ kg

=> Ans - (A)

Question 2

P. Q and R have a certain amount of money with themselves. Q has 25% more than what P has, and R has $\frac{1}{5}$th of what Q has. If P. Q and R together have Rs. 150, then how much money does P alone have? (in Rs.)

A 40

B 70

C 80

D 60

E 50

Answer: D

Explanation:

Let P has = $Rs.100x$

=> Amount with Q = $100x + \frac{25}{100} \times 100x = Rs.125x$

=> Amount with R = $\frac{1}{5} \times 125x = Rs.25x$

Total amount together = $100x + 125x + 25x = 150$

=> $x = \frac{150}{250} = \frac{3}{5}$

=> $x = 0.6$

$\therefore$ Amount with P alone = $100 \times 0.6 = Rs.60$

Question 3

Among five people - A, B, C, D and E — each scoring different marks, only one person scored less marks than B. D scored more marks than B but less than A. A did not score the highest marks. Who scored the second highest marks?

A E

B Cannot be determined

C A

D C

E D

Answer: C

Explanation:
Let us rank the person according to the marks scored by them, where 1 -> highest marks and 5 -> lowest marks.

Only one person scored less marks than B, => B = 4

Also, A > D > B and $A \neq 1$

=> A = 2 and D = 3

Thus, ranking from 1-5 = C/E , A , D , B , E/C

∴ A scored the second highest marks.

Question 4

A, B and C have a certain amount of money with themselves. C has $\frac{3}{4}$ of what A has and B has Rs. 50 less than C. If A, B and C together have Rs. 250, then how much does A alone have? (in Rs.)

A 75

B 160

C 80

D 120

E 140

Answer: D

Explanation:
Amount with A = $Rs.4x$

=> Amount with C = $\frac{3}{4} \times 4x = Rs.3x$

=> Amount with B = $Rs.(3x - 50)$

Total amount with A,B & C = $4x + 3x + (3x - 50) = 250$

=> $10x = 250 + 50 = 300$

=> $x = \frac{300}{10} = 30$

∴ Amount with A = $4 \times 30 = Rs.120$

Question 5

If an amount of Rs. 97836 is distributed equally amongst 31 children, how much amount would each child get ?

A Rs. 3756

B Rs. 3556

C Rs. 3356

D Rs. 3156

E None of these

Answer: D

Explanation:
Total amount = 97836

No. of children = 31

Since amount is distributed equally

=> Amount each child will get = $\frac{97836}{31}$ = Rs. 3,156

Question 6

In a class of 30 students and 2 teachers, 'each student got sweets that are 20% of the total number of students and each teacher got sweets that are 30% of the total number of students. How many sweets were there ?

A 188

B 180

C 208

D 178

E None of these

Answer: E

Explanation:
There are 30 students and 2 teachers.

Sweets received by each student = $\frac{20}{100} * 30$ = 6

=> Total sweets received by all the students = 30 * 6 = 180

Sweets received by each teacher = $\frac{30}{100} * 30$ = 9

=> Total sweets received by both teachers = 2 * 9 = 18

∴ Total sweets distributed in class = 180 + 18 = 198

Question 7

The cost of 20 folders and 15 pens is Rs. 995. What is the cost of 12 folders and 9 pens ?

A Rs. 652

B Rs. 597

C Rs. 447

D Cannot be determined

E None of these

Answer: B

Explanation:
Let the cost of a folder = Rs. x

and cost of a pen = Rs. y

=> $20x + 15y = 995$

Multiplying the above equation by $(\frac{3}{5})$, we get :

=> $\frac{3}{5} \times (20x + 15y = 995)$

=> $12x + 9y = 597$

∴ Cost of 12 folders and 9 pens is Rs. 597

Question 8

The cost of 12 note-books and 16 pens is Rs. 852. What is the cost of 9 note-books and 12 pen?

A Rs. 743

B Rs. 639

C Rs. 567

D Cannot be determined

E None of these

Answer: B

Explanation:
Let the cost of a note-book = Rs. x

and cost of a pen = Rs. y

=> $12x + 16y = 852$

Multiplying the above equation by $(\frac{3}{4})$, we get :

=> $\frac{3}{4} \times (12x + 16y = 852)$

=> $9x + 12y = 639$

∴ Cost of 9 note-books and 12 pens is Rs. 639

Question 9

The cost of 10 Chairs and 15 Tables is Rs. 15,525/-. What is the cost of 8 Chairs and 12 Tables?

A Rs. 13,560/-

B Rs. 12,420/-

C Rs. 14,840/-

D Cannot be determined

E None of these

Answer: B

Explanation:
Let the cost of a chair = Rs. x

and cost of a table = Rs. y

=> $10x + 15y = 15525$

Multiplying the above equation by $(\frac{4}{5})$, we get :

=> $\frac{4}{5} \times (10x + 15y = 15525)$

=> $8x + 12y = 12420$

∴ Cost of 8 chairs and 12 tables is Rs. 12,420

Question 10

A trader sells 150 metres of cloth for Rs. 6,600 and he sells 300 metres of cloth for Rs. 12,750. How much concession does the trader give per metre of cloth, when he sells 300 metres of cloth?

A Rs. 3

B Rs.2.5

C Rs. 1.5

D Rs. 2

E None of these

Answer: C

Explanation:
Case I : Trader sells 150 metres of cloth for Rs. 6,600

=> S.P. per metre = Rs. $\frac{6600}{150}$

= Rs. 44

Case II : Trader sells 300 metres of cloth for Rs. 12,750

=> S.P. per metre = Rs. $\frac{12750}{300}$

= Rs. 42.5

∴ Required discount = Rs. (44 - 42.5) = Rs. 1.5