**Linear Equations**

1. **In an examination, a student scores 4 marks for every correct answer and loses 1 mark for every wrong answer. If he attempts all 60 questions and secures 130 marks, the no of questions he attempts correctly is :**
2. 35 B. 38 C. 40 D. 42

* ANS: Let the number of correct answers be X.
* Number of incorrect answers = (60 – X).
* 4x – (60 – x) = 130
  + 5x = 190
  + *x = 38*

1. ***If 2 tables and 3 chairs cost Rs, 3500 and 3 tables and 2 chairs cost Rs. 4000, then how much does a table* cost ?**
2. 500 B. 1000 C. 1500 D. 2000

* ANS. Let the cost of a table and that of a chair be Rs. x and Rs, y respectively.
* Then, 2x + 3y = 3500 ...(i)
* and 3x + 2y = 4000 .....(ii)
* solving (i) and (ii) we get x = 1000, y = 500

1. **In a regular week, there are 5 working days and for each day, the working hours are 8. A man gets Rs. 2.40 per hour for regular work and Rs. 3.20 per hours for overtime. If he earns Rs. 432 in 4 weeks, then how many hours does he work for ?**
2. 160 B. 175 C. 180 D. 195

* ANS : Suppose the man works overtime for x hours.
* Now, working hours in 4 weeks = (5 x 8 x 4) = 160.
* Therefore,  160 \* 2.40 + x \* 3.20 = 432
* 3.20x = 432 - 384 = 48
* x = 15.
* Hence, total hours of work = (160 + 15) = 175.

1. **To fill a tank, 25 buckets of water is required.  How many buckets of water will be required to fill the same tank if the capacity of bucket is reduced to two-fifth of its present** ?
2. 52.5 B. 62.5 C. 72. 5 D. 82.5

* ANS: Let the capacity of 1 bucket = x.
  + Then, capacity of tank = 25x.
* New capacity of bucket  = (2/5)x
* Required no of buckets = 25x/(2x/5)  = 62.5

1. **A tank is 2/5 full. If 16 litres of water is added to the tank, it becomes 6/7 full. The capacity of the tank is:**
2. 28  litres B. 32  litres C. 35  litres D. 42  litres

ANS: Let the capacity of the tank be x litres.

Then, (6x/7 - 2x/5) = 16 <=> 30x - 14x = 16\*35 <=> x = 35

1. **In a group of buffaloes and ducks, the number of legs are 24 more than twice the number of heads. What is the number of buffaloes in the group**
2. 6 B. 8 C. 10 D. 12

ANS: Let the number of buffaloes be x and number of ducks be y.

Then 4x + 2y = 2(x + y) + 24

=> 2x = 24

=> x = 12

7. **The highest score in an inning was  3/11 of the total and the next highest was 3/11 of the reminder . If the score  differ by 9, the total score was** :

A. 110 B. 121 C. 132 D. 143

ANS; Let the score be x. Then the highest score = 3x/11.

Reminder = (x - 3x/11) = 8x/11 .Next the highest score = 3/11 of 8x/11 = 24x/121.

3x/11 - 24x/11 = 9 <=> 33x - 24x = 9\*121 <=> x= 121..

1. **Twenty times a positive integer is less than its square by 96. What is the integer**
2. **42**  B. 36 C. 48 D. 24

ANS: Let the integer be x. Then,

x2 - 20x = 96

(x + 4)(x - 24) = 0

x = 24

1. **A man could buy a certain number of notebooks for Rs.300. If each notebook cost is Rs.5 more, he could have bought 10 notebooks less for the same amount. Find the price of each notebook**
2. 15 B. 20 C. 10 D. 8

* ANS: Let the price of each note book be Rs.x.
* Let the number of note books which can be brought for Rs.300 each at a price of Rs.x be y.
* Hence xy = 300
* y = 300/x
* (x + 5)(y - 10) = 300 => xy + 5y - 10x - 50 = xy
* =>5(300/x) - 10x - 50 = 0 => −150+x2+5x-150+x2+5x
* multiplying both sides by -1/10x
* x2+15x−10x−150=0x2+15x-10x-150=0
* x(x + 15) - 10(x + 15) = 0
* x = 10 or -15
* As x>0, x = 10.

1. **A man has only 20-paise and 25-paise coins in a bag. If he has 50 coins in all totaling to Rs.10.25, then the number of 20-paise coins is**
2. 42 B. 45 C. 38 D. 36

* ANS: Let number of 20 ps coins = x and
* number of 25 ps coins = y
* Given total coins in the bag = 50
* x + y = 50.......(1)
* But the total money in the bag = Rs. 10.25
* 0.20x + 0.25y = 10.25
* 20x + 25y = 1025.........(2)
* Now multiplying (1) by 25 we get
* 25x+25y=1250.............(3)
* By solving (2) and (3)
* 20x + 25y = 1025;
* x = 45;
* Then, the no. of 20 ps coins are 45.

1. **The price of 2 oranges, 3 bananas and 4 apples is Rs. 15. The price of 3 oranges, 2 bananas and 1 apple is Rs. 10. What will be price of 4 oranges, 4 bananas and 4 apples  ?**
2. Rs. 10 B. Rs. 15 C. Rs. 20 D. Rs. 25

* ANS: Let the Oranges be 'O', Bananas be 'B' and Apples be 'A'
* From the given data,
* 2O + 3B + 4A = 15 ...... (I)
* 3O + 2B + A = 10 ..... (II)
* On adding (I) and (II),
* 5O + 5B + 5A = 25
* O+ B + A = 5
* 4O + 4B + 4A = 20

1. **Along a yard 225 metres long, 26 trees are palnted at equal distances, one tree being at each end of the yard. What is the distance between two consecutive trees**
2. 8 B. 9 C. 10 D. 11

* ANS: 26 trees have 25 gaps between them,  
  Required distance (225/25) = 9

1. **Hemavathi gets 3 marks for each right sum and loses 2 marks for each wrong sum. He attempts 35 sums and obtains 60 marks. The number of sums attempted correctly is ?**
2. 23 B. 24 C. 25 D. 26

* ANS: Let, Hema attempted 'k' sum correctly, then
* k x 3 -2 x(35-k) = 60  
  5k = 130  
  k = 26
* so 26 correct sums.

1. **A tailor has 37.5 metres of cloth and he has to make 8 pieces out of a metre of cloth. How many pieces can he make out of half of the cloth he has ?**
2. 300 B. 150 C. 175 D. 200

* ANS; Half of the cloth = 37.5/2  
  From 1 meter he will make 8 pieces  
  => in 37.5/2 ---- ?
* 37.5/2 x 8
* = 150.

1. **In a slip test, K got the 15th rank and he was 44th from the bottom of the list of passed students. 4 students did not take up the slip test and 3 students were failed. What is the total strenght of the class ?**
2. 63 B. 62 C. 64 D. 65

* ANS: Total strength of the class is given by
* 15 + 44 + 4 + 3 - 1 = 65

1. **An owner of a Dry fruits shop sold small packets of mixed nuts for Rs. 150 each and large packets for Rs. 250 each. One day he sold 5000 packets, for a total of Rs. 10.50 lakh. How many small packets were sold** ?
2. 2000 B. 3000 C. 2500 D. 3500

ANS: Let 's' be the number of small packets and 'b' the number of large packets sold on that day.Therefore, s + b = 5000 ... eqn (1)Each small packet was sold for Rs.150.  
Therefore, 's' small packets would have fetched Rs.150s.Each large packets was sold for Rs.250.Therefore, 'b' large packets would have fetched Rs.250b.Total value of sale = 150s + 250b = Rs. 10.5 Lakhs (Given)Or 150s + 250b = 10,50,000 ... eqn Multiplying equation (1) by 150, we get 150s + 150b = 7,50,000 ... eqn (3)Subtracting eqn (3) from eqn (2), we get 100b = 3,00,000  
Or b = 3000We know that s + b = 5000  
So, s = 5000 - b = 5000 - 3000 = 2000.2000 small packets were sold.