1. 1) B is mother of D but D is not daughter of B. 2) A is son of M and brother of G. 3) G is sister of D Which of the following cannot be referred from the given information? (A) B has 3 children (B) M has two sons (C) G is younger to B. (D) A is younger to D Answer: d **Explanation:** D is the son of B. Also from the third clue, G and D are siblings. A is the brother of G (from 2nd clue). So A, G, D are siblings. A is the son of M. So M is the father (as B is the mother). Finally, B and M has 3 children: 2 Sons D & A, and daughter G. Definitely G is younger to B as she is daughter of G But it can't be said who is younger among children A,D & G. So option D is not inferred. 2. A contractor undertook to make 15 km of roadway in 40 weeks. In 10 weeks, 3 km was complete by 180 men working 8 hours a day. The men then agreed to work 1 hour a day overtime, And some boys were engaged to assist them, the work was finished in the stipulated time(40 weeks). How many boys were employed, if the work of 3 boys is equal to that of 2 men? a) 70 b) 50 c) 60 d) 80 Answer: b Explanation: Let the capacity of man = 3 units, and boy = 2 units per hour. Now total work =  $3 \times 180 \times 8 \times 7 \times 10 = 3$  km. - - - - - (1) Let k boys were recruited. Now total work = (3×180+2×k) ×9×7×30 = 12km. - - - - - (2)

3. A can do a piece of work in 10 days, B in 15 days. They work for 5 days. The rest of work finished by C in 2 days. If they get Rs 1500 for the whole work, the daily wages of B and C are? Answer:

By dividing 2nd equation by 1st,

 $\Rightarrow$  k = 50

 $\Rightarrow (540+2k)\times9\times7\times303\times180\times8\times7\times10=4$ 

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Let the total work = 30 units.

Then capacity of A=3 units, B=2 units. Now they worked for 5 days. So they must have completed 25 units. Rest of the work 5 units done by C in 2 days. So C capacity =5/2=2.5 units.

Given that toatal wages are Rs.1500 for 30 units. So for 1 unit of work they get Rs.50. Now B and C per day work = (2 + 2.5) = 4.5 units. So their daily wages =  $4.5 \times 50 = Rs.225$ 

- 4. The average of ten numbers is 7 .If each number is multiplied by 12 , then the average of new set of numbers is :
- a) 7
- b) 19
- c) 82
- d) 84

Answer: d

**Explanation:** 

If each number is multiplied by K, then the new average increases by K times. So new average = 84

- 5. In an examination, a student scores 4 marks for every correct answer and loses 1 mark for every wrong answer. If he attempts all 75 questions and secures 125 marks, the number of questions he attempts correctly,
- is:
- a) 35
- b) 40
- c) 42
- d) 46

Answer: B

Explanation:

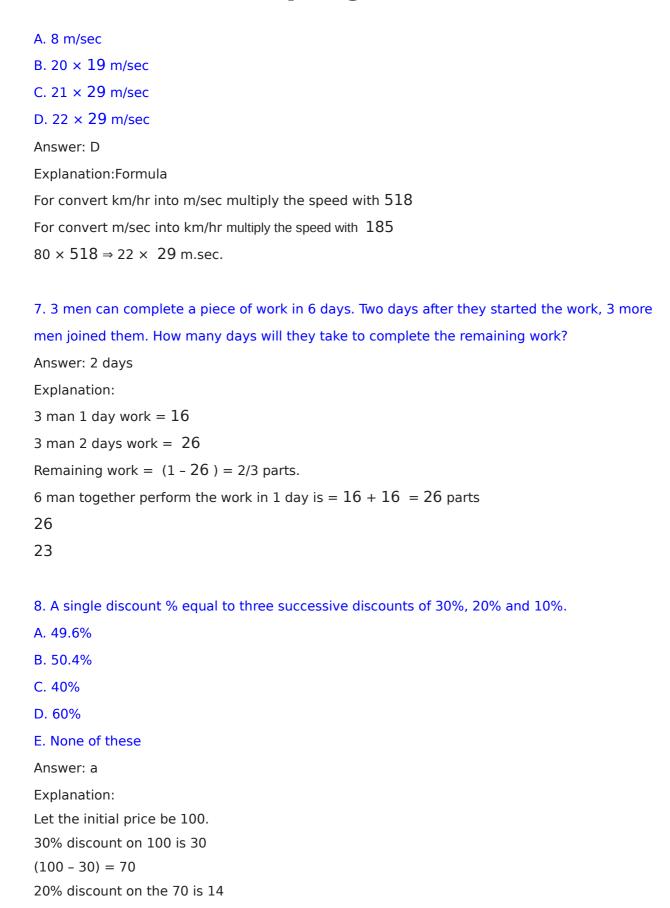
Let the number of correct answers be x.

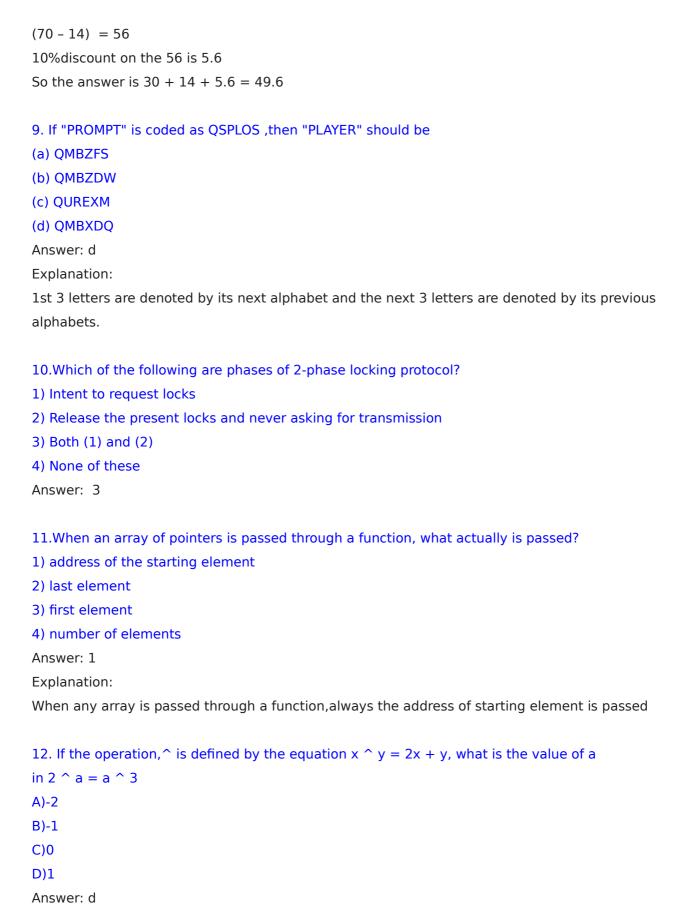
Then numbers of incorrect answers will be 75 - x

We get  $4x - (75 - x) \times 1 = 125$ 

On solving the equation we get x = 40

6. A car moves at the speed of 80 km/hr. what is the speed of the car in metres per second?





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Explanation:
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$$2^a = 2 \times 2 + a - - (i)$$
  
 $a^3 = 2 \times a + 3 - - (ii)$   
 $4 + a = 2a + 3$   
 $\Rightarrow a = 1$ 

13. In a certain school, 20% of the students are below 8 yrs of age. The number of students above 8 yrs of age is (2/3) of the number of students of 8 years age which is 96. What is the total number of students in the school?

Answer: 200 Explanation:

Let total students be x.

$$\Rightarrow 0.2x + 23 \times 96 + 96 = x$$

$$\Rightarrow x = 200$$

14. If there are 5,000 voters out of which 20% are not eligible to vote and there are two candidates contesting. The winning candidate won by 15% of votes. What is the total number of votes he got ?

Answer: 2300

Explanation:

Number of voters eligible for voting =  $5000 \times 0.8 = 4000$ 

Number of votes extra got by the winning candidate =  $4000 \times 0.15 = 600$ 

Let the number of votes won by winning candidate = x.

$$\Rightarrow x - (4000 - x) = 600$$
$$\Rightarrow x = 2300$$

15. Find the set of all points (x, y) such that the area of the triangle with vertices (0, 0), (6, 4) and (x, y) is 4.

A).(x, y) lies on the circle (y - 6)2 + (x - 4)2 = 16

B).(x, y) satisfies 
$$6y - 4x = 8$$
 or  $6y - 4x = -8$ 

C).(x, y) satisfies 
$$6y - 4x = 4$$
 or  $6y - 4x = -4$ 

D).(x, y) satisfies 
$$6y - 4x = 8$$

Answer: b

Explanation:

Area of a triangle if one of the point is  $(0, 0) = 12|(x_1y_2-x_2y_1)|$ 

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\Rightarrow 12|(6\times y-4\times x)| = 4\Rightarrow 6y - 4x = 8
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16. When not moving on the sidewalk, Maya can walk the length of the sidewalk in 7 minutes. If she stands on the sidewalk as it moves, she can travel the length in 4 minutes. If Maya walks on the sidewalk as it moves, how many minutes will it take her to travel the same distance? Assume she always walks at the same speed, and express your answer as a decimal to the nearest tenth.

- (a) 3.6
- (b) 2.5
- (c) 3.8
- (d) 2.8

Answer: b

Explanation:

Assume distance of sidewalk "x"

Speed 1 (moving on sidewalk)

Speed 2 (moving off sidewalk)

Since both the movements are in same direction, we can do speed 1 + speed 2

Speed 1 = x4

Speed 2 = x7

Speed 1 + speed 2 = 11x28 = 0.39286x

Now new time while moving on sidewalk = x0.39286x = 2.54544

Hence, the answer is 2.5

17. The ages of Old and Young total 48. Old is twice as old as Young was when Old was half as old as Young will be when Young is three times as Old was when Old was three times as old as Young. How old is Old?

- (a) Old-42, Young-26
- (b) Old-38, Young-22
- (c) Old-30, Young-18
- (d) Old-28, Young-14

Answer: c

Explanation:

From the options itself,we can see that option c

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old = 30

young = 18

30 + 18 = 48

By reducing this years only by one

Before 6years

old = 24 (half of young)

young = 12 (twice of old)
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