

Question 1: What will come in place of the question mark (?) in the following series?

16, 24, 40, ?, 96, 136

A) 54

B) 60

C) 56

D) 64

E) 62

Question 2: What will come in place of the question mark (?) in the following series?

72, 78, 66, 86, ?, 98

A) 56

B) 54

C) 53

D) 64

E) 60

Question 3: What will come in place of the question mark (?) in the following series?

12, 48, 36, 144, 132, ?

A) 120

B) 792

C) 528

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D) 264

E) 396

Question 4: What will come in place of the question mark (?) in the following series?

22, 38, 58, 86, 130, ?

A) 184

B) 188

C) 212

D) 206

E) 204

Question 5: 384 ml of mixture contains milk and water in the ratio of 7:5 respectively. 25% of mixture is taken out and 'x' ml of milk and 80 ml of water is added into the remaining mixture such that quantity of milk in final mixture becomes 50%. Find the value of 'x'.

A) 54 ml

B) 32 ml

C) 48 ml

D) 36 ml

E) None of these

Question 6: A shopkeeper bought rice A at a rate of Rs. 48 per kg and mixed it with rice B which costs Rs. 64 per kg and sold the mixture for Rs. 52 per kg. If total quantity of mixture is 128 kg and there is neither profit nor loss on selling the mixture, then quantity of rice A is:

- A) 96 kg
- B) 32 kg
- C) 64 kg
- D) 16 kg
- E) None of these

Question 7: A and B entered into a business with initial investment of Rs. 19800 and Rs. 15300, respectively and the ratio of time for which they made their investment is 9:11 respectively. If profit share of A is Rs. 14400, then find the total profit earned by A and B together.

- A) Rs. 28000
- B) Rs. 25600
- C) Rs. 30400
- D) Rs. 24000
- E) None of these

Question 8: Speed of a boat in downstream is 20% more than speed of boat in still water. If the boat can travel a distance of 144 km upstream and 144 km downstream in 20 hours. Find the distance travelled by boat in still water in 8 hours.

- A) 120 km
- B) 128 km
- C) 112 km
- D) 160 km
- E) None of these

Question 9: Find the area of a rectangular field if the cost of fencing the field at a rate of Rs. 5 per centimetre is Rs. 230 and length of diagonal of the rectangle is 17 cm.

- A) 120 cm^2
- B) 105 cm^2
- C) 110 cm^2
- D) 102.5 cm^2
- E) None of these

Question 10: Sourav took a loan of Rs. 3600 from a bank and time for which he took the loan is one-eighth of the rate of simple interest on which he took the loan. If interest paid by him is Rs. 4608, then find the rate of simple interest.

- A) 40%
- B) 32%
- C) 16%
- D) 24%
- E) None of these

Question 11: A, B and C can complete a piece of work in 42 days, 54 days and 63 days respectively. If A and B together started the work and worked on it for 18 days, then C will complete the remaining work in:

- A) 12 days
- B) 10 days
- C) 18 days

- D) 15 days
- E) None of these

Question 12: In the question, two equations I and II are given. You have to solve both the equations to establish the correct relation between x and y and choose the correct option.

I. $x^3 = -216$

II. $y^2 + 15y + 56 = 0$

- A) $x > y$
- B) $x < y$
- C) $x = y$ or the relationship cannot be established
- D) $x \geq y$
- E) $x \leq y$

Question 13: In the question, two equations I and II are given. You have to solve both the equations to establish the correct relation between x and y and choose the correct option.

I. $3x + 2y = 22$

II. $32y = 160$

- A) $x > y$
- B) $x < y$
- C) $x = y$ or the relationship cannot be established
- D) $x \geq y$
- E) $x \leq y$

Question 14: In the question, two equations I and II are given. You have to solve both the equations to establish the correct relation between x and y and choose the correct option.

I. $x^2 - 3x = 10$

II. $y^2 + 7y + 12 = 0$

A) $x > y$

B) $x < y$

C) $x = y$ or the relationship cannot be established

D) $x \geq y$

E) $x \leq y$

Question 15: In the question, two equations I and II are given. You have to solve both the equations to establish the correct relation between x and y and choose the correct option.

I. $(x + 7)^2 = x + 7$

II. $y^2 + y = 30$

A) $x > y$

B) $x < y$

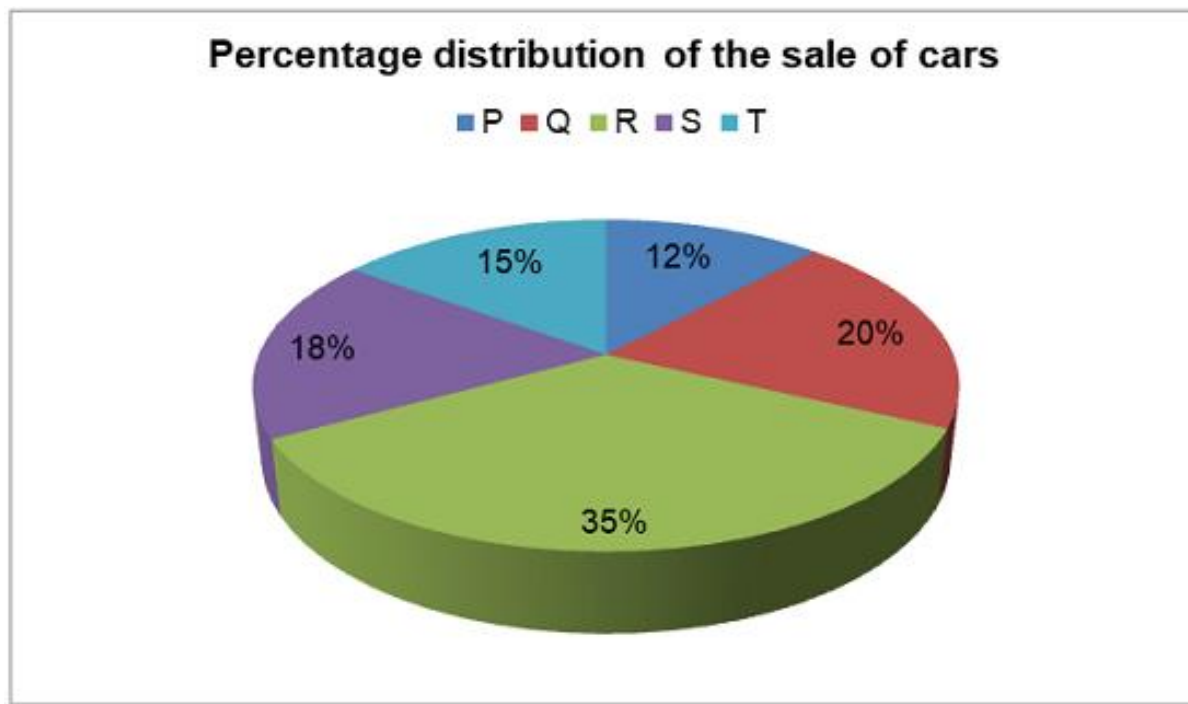
C) $x = y$ or the relationship cannot be established

D) $x \geq y$

E) $x \leq y$

Directions: Answer the questions based on the information given below.

The pie chart given below shows the percentage distribution of the number cars (diesel + petrol) sold by five different companies in the year 2012. Difference between the number of cars sold by P and S is 150.



Question 16: Find the total number of cars sold by all the five companies together in 2012.

- A) 1500
- B) 2000
- C) 2200
- D) 2500
- E) 3000

Question 17: Find the total cars manufactured by company T in 2012, if it sold 60% of its total manufactured cars.

- A) 600

- B) 575
- C) 525
- D) 625
- E) 675

Question 18: The number of cars sold by company Q in 2013 is 20% more than the previous year. Find the number of cars sold by company Q in 2013.

- A) 610
- B) 600
- C) 640
- D) 650
- E) 580

Question 19: If the ratio of the diesel cars to petrol cars sold by company R in 2012 is 3:2, then find the number of petrol cars sold by R in 2012.

- A) 400
- B) 300
- C) 275
- D) 350
- E) 375

Question 20: Find the average number of cars sold by companies P and S.

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- A) 375
- B) 325
- C) 425
- D) 400
- E) 300

ANSWER KEYS and SOLUTIONS:

1) - D)	2) - A)	3) - C)	4) - D)	5) - B)	6) - A)
7) - A)	8) - A)	9) - A)	10) - B)	11) - D)	12) - A)
13) - B)	14) - A)	15) - E)	16) - D)	17) - D)	18) - B)
19) - D)	20) - A)				

Solution 1: D)

$$16 + 8 \times 1 = 24$$

$$24 + 8 \times 2 = 40$$

$$40 + 8 \times 3 = 64$$

$$64 + 8 \times 4 = 96$$

$$96 + 8 \times 5 = 136$$

Hence, option d.

Solution 2: A)

$$72 + 2 \times 3 = 78$$

$$78 - 3 \times 4 = 66$$

$$66 + 4 \times 5 = 86$$

$$86 - 5 \times 6 = 56$$

$$56 + 6 \times 7 = 98$$

Hence, option a.

Solution 3: C)

$$12 \times 4 = 48$$

$$48 - 12 = 36$$

$$36 \times 4 = 144$$

$$144 - 12 = 132$$

$$132 \times 4 = 528$$

Hence, option c.

Solution 4: D)

$$22 + 16 = 38$$

$$38 + 20 = 58$$

$$58 + 28 = 86$$

$$86 + 44 = 130$$

$$130 + 76 = 206$$

Hence, option d.

Solution 5: B)

Quantity of milk in 384 ml of mixture = $\frac{7}{12} \times 384 = 224$ ml

Quantity of water in 384 ml of mixture = $384 - 224 = 160$ ml

According to question;

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$$0.75 \times 224 + x = 0.75 \times 160 + 80$$

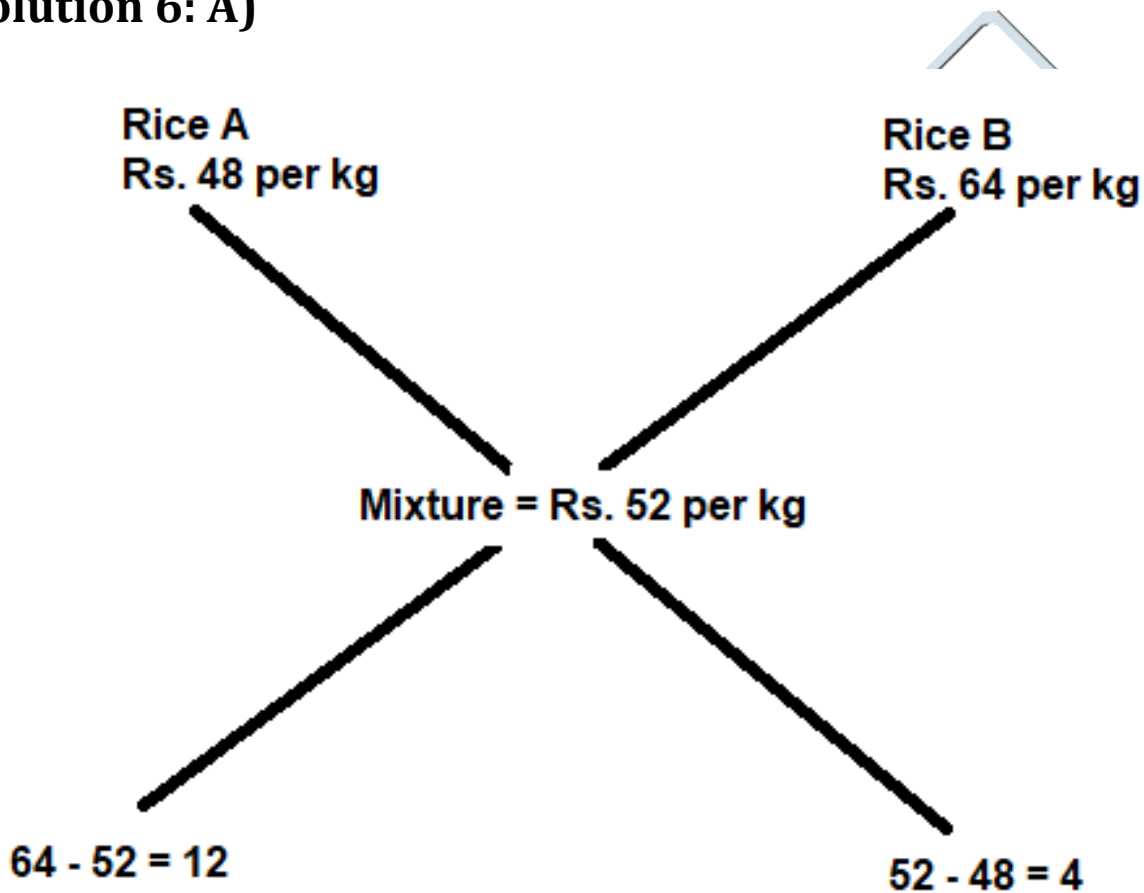
$$\text{Or, } 168 + x = 120 + 80$$

$$\text{Or, } x = 200 - 168$$

$$\text{Or, } x = 32 \text{ ml}$$

Hence, option b.

Solution 6: A)



$$\text{Desired Ratio} = 12:4 = 3:1$$

Desired quantity of rice A = $\frac{3}{4} \times 128 = 96 \text{ kg}$

Hence, option a.

Solution 7: A)

Ratio of profit share of A to B = $(19800 \times 9):(15300 \times 11) = 18:17$

Desired profit = $35/18 \times 14400 = \text{Rs. } 28000$

Hence, option a.

Solution 8: A)

Let speed of boat in still water is 'x' km/h

Speed of boat in downstream = $1.20 \times x = 1.2x$ km/h

Speed of boat in upstream = $x - 0.2x = 0.8$ km/h

According to question;

$$144/0.8x + 144/1.2x = 20$$

$$\text{Or, } 180/x + 120/x = 20$$

$$\text{Or, } x = 300/20 = 15$$

Desired distance = $15 \times 8 = 120$ km

Hence, option a.

Solution 9: A)

Let length and breadth of the rectangle is 'x' cm and 'y' cm respectively.

Perimeter of rectangle = $230/5 = 46$ cm

$$\text{So, } 2(x + y) = 46$$

$$\text{Or, } x + y = 23$$

Squaring both sides;

$$x^2 + y^2 + 2xy = 529$$

$$\text{So, } 2xy = 529 - 17^2 = 240$$

$$\text{So, } xy = 120 \text{ cm}^2$$

Hence, option a.

Solution 10: B)

Let the rate is $8x\%$

$$\text{So, time} = 1/8 \times 8x = x \text{ years}$$

According to question;

$$(3600 \times x \times 8x)/100 = 4608$$

$$\text{Or, } x^2 = 16$$

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

$$\text{Desired rate} = 4 \times 8 = 32\%$$

Hence, option b.

Solution 11: D)

Let total amount of work = 378 units (LCM of 42, 54 and 63)

$$\text{Amount of work done by A in one day} = 378/42 = 9 \text{ units}$$

$$\text{Amount of work done by B in one day} = 378/54 = 7 \text{ units}$$

$$\text{Amount of work done by C in one day} = 378/63 = 6 \text{ units}$$

$$\text{Amount of work done by A and B in 18 days} = 16 \times 18 = 288 \text{ units}$$

$$\text{Desired time} = (378 - 288)/6 = 15 \text{ days}$$

Hence, option d.

Solution 12: A)

From I:

$$x^3 = -216$$

$$x = -6$$

From II:

$$y^2 + 15y + 56 = 0$$

$$y^2 + 7y + 8y + 56 = 0$$

$$y(y + 7) + 8(y + 7) = 0$$

$$(y + 7)(y + 8) = 0$$

$$y = -7, -8$$

X	Relation	y
-6	>	-7
-6	>	-8

So, $x \leq y$

Hence, option a.

Solution 13: B)

From II:

$$32y = 160$$

$$y = 5$$

From I:

$$3x + 2y = 22$$

$$3x + 10 = 22$$

$$3x = 12$$

$$x = 4$$

So, $x < y$

Hence, option b.

Solution 14: A)

From I:

$$x^2 - 3x = 10$$

$$x^2 - 3x - 10 = 0$$

$$x^2 + 2x - 5x - 10 = 0$$

$$x(x + 2) - 5(x + 2) = 0$$

$$(x + 2)(x - 5) = 0$$

$$x = -2, 5$$

From II:

$$y^2 + 7y + 12 = 0$$

$$y^2 + 3y + 4y + 12 = 0$$

$$y(y + 3) + 4(y + 3) = 0$$

$$(y + 3)(y + 4) = 0$$

$$y = -3, -4$$

X	Relation	y
-2	>	-3

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-2	>	-4
5	>	-3
5	>	-4

So, $x > y$

Hence, option a.

Solution 15: E)

From I:

$$(x + 7)^2 = x + 7$$

$$x^2 + 13x + 42 = 0$$

$$x^2 + 7x + 6x + 42 = 0$$

$$x(x + 7) + 6(x + 7) = 0$$

$$(x + 7)(x + 6) = 0$$

$$x = -7, -6$$

Short cut:

$$(x + 7)^2 = x + 7$$

$$(x + 7)^2 - (x + 7) = 0$$

$$(x + 7)(x + 7 - 1) = 0$$

$$(x + 7)(x + 6) = 0$$

$$x = -7, -6$$

From II:

$$y^2 + y = 30$$

$$y^2 + y - 30 = 0$$

$$y^2 + 6y - 5y - 30 = 0$$

$$y(y + 6) - 5(y + 6) = 0$$

$$(y + 6)(y - 5) = 0$$

$$y = -6, 5$$

X	Relation	y
-7	<	-6
-7	<	5
-6	=	-6
-6	<	5

So, $x \leq y$

Hence, option e.

Solution 16: D)

Let the total cars sold by all the five companies together be 'x'.

$$0.18x - 0.12x = 150$$

$$0.06x = 150$$

$$x = 2500$$

Company	Number of cars sold
P	12% of 2500 = 300
Q	20% of 2500 = 500
R	35% of 2500 = 875
S	18% of 2500 = 450
T	15% of 2500 = 375

Required total = 2500

Hence, option d.

Solution 17: D)

Required total cars manufactured by company T = $375/0.6 = 625$

Hence, option d.

Solution 18: B)

Required number of cars sold in 2013 = $1.2 \times 500 = 600$

Hence, option b.

Solution 19: D)

Required number of petrol cars = $2/5 \times 875 = 350$

Hence, option d.

Solution 20: A)

Required average = $(300 + 450)/2 = 375$

Hence, option a.

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