

# IBPS RRB CLERK Prelims Previous Year Paper 2021

## RRB Clerk Prelims Memory Based Mock Test - Quantitative Aptitude

### Directions (01-05): Missing number series

Directions (01-05): What value should come in the place of (?) in the following number series?

1) 7, 3.5, 3.5, 7, 28, ?

a) 224

b) 228

c) 232

d) 248

e) 245

**Answer: A**

$$7 * 0.5 = 3.5$$

$$3.5 * 1 = 3.5$$

$$3.5 * 2 = 7$$

$$7 * 4 = 28$$

$$28 * 8 = \mathbf{224}$$

2) 6, 5, 9, 26, ?, 514

a) 52

b) 104

c) 103

d) 56



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e) 98

**Answer: C**

$$6 * 1 - 1 = 5$$

$$5 * 2 - 1 = 9$$

$$9 * 3 - 1 = 26$$

$$26 * 4 - 1 = \mathbf{103}$$

$$103 * 5 - 1 = 514$$

**3) 6, 10, 15, 22, 32, ?**

a) 46

b) 48

c) 50

d) 52

e) 56

**Answer: A**

$$6 + 4 = 10$$

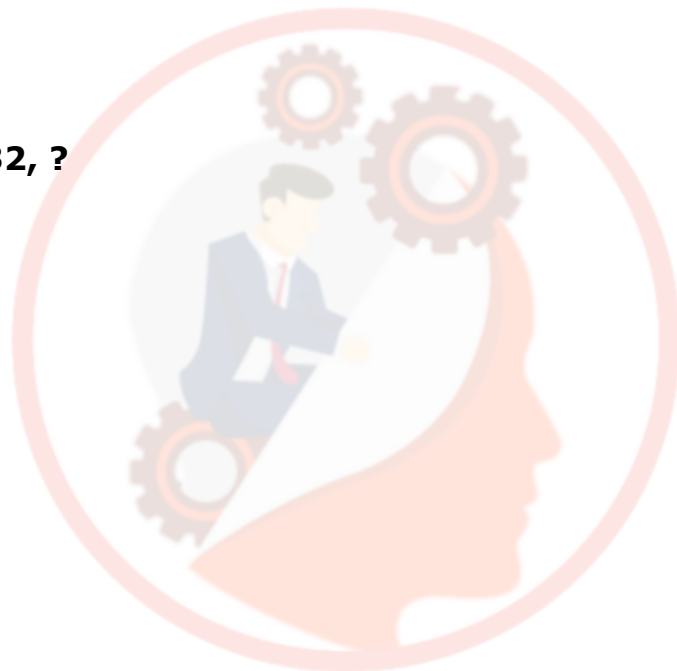
$$10 + 5 = 15$$

$$15 + 7 = 22$$

$$22 + 10 = 32$$

$$32 + 14 = \mathbf{46}$$

Difference of difference



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**4) 3, 17, 45, 87, ?, 213**

a) 125

b) 143

c) 147

d) 137

e) 153

**Answer: B**

$$3 + 2 * 7 = 17$$

$$17 + 4 * 7 = 45$$

$$45 + 6 * 7 = 87$$

$$87 + 8 * 7 = \mathbf{143}$$

$$143 + 10 * 7 = 213$$

**5) 9, 4, 24, 19, 39, ?**

a) 32

b) 30

c) 34

d) 36

e) 38

**Answer: C**

$$9 - 5 = 4$$



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$$4 + 20 = 24$$

$$24 - 5 = 19$$

$$19 + 20 = 39$$

$$39 - 5 = \mathbf{34}$$

**Directions (06-17): Simplifications**

**Directions (06-17):** What value should come in the place of (?) in the following questions.

**6. Questions**

$$4^8 \div 256 \times 64 \div 4^3 \times 4 = 16 \times 4^?$$

A.7

B.3

C.2

D.5

E. None of these

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**Explanation**

**Answer: B**

$$4^8 \div 4^4 \times 4^3 \div 4^3 \times 4 = 4^2 \times 4^?$$

$$\Rightarrow 4^{(8 - 4 + 3 - 3 + 1)} = 4^{(2 + ?)}$$

$$\Rightarrow 4^5 = 4^{(2 + ?)}$$

$$\Rightarrow 5 = 2 + ?$$

$$\Rightarrow ? = 5 - 2$$

$$\Rightarrow ? = 3$$

## 7. Questions

$$(24 * \sqrt{169}) * 15 = ? * \sqrt{1296}$$

A.160

B.120

C.180

D.110

E.130

### Explanation

**Answer: E**

$$(24 * \sqrt{169}) * 15 = ? * \sqrt{1296}$$

$$24 * 13 * 15 = ? * 36$$

$$? = 130$$

## 8. Questions

$$(14^3 * 5) \div 28 = ? - (13 * 30)$$

A.680



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**B.730**

**C.780**

**D.820**

**E.880**

**Explanation**

**Answer: E**

$$(14^3 * 5) \div 28 = ? - (13 * 30)$$

$$490 = ? - 390$$

$$? = 880$$

**9. Questions**

$$12.5\% \text{ of } 240 + 37.5\% \text{ of } 320 + 62.5\% \text{ of } 400 = ?$$

**A.400**

**B.420**

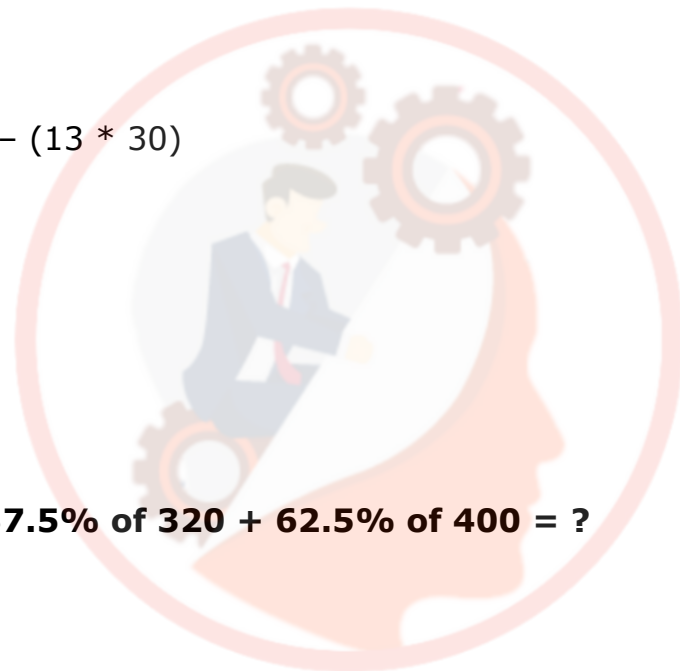
**C.450**

**D.480**

**E.360**

**Explanation**

**Answer: A**



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$$12.5\% \text{ of } 240 + 37.5\% \text{ of } 320 + 62.5\% \text{ of } 400 = ?$$

$$30 + 120 + 250 = ?$$

$$400 = ?$$

### 10. Questions

$$24^2 - 19^2 = ? * 12 - 17^2$$

A.49

B.45

C.41

D.42

E.44

### Explanation

**Answer: D**

$$24^2 - 19^2 = ? * 12 - 17^2$$

$$576 - 361 = ? * 12 - 289$$

$$? = 42$$

$$11) 57 * 22 + 38 * 18 = ? * 19$$

a) 107

b) 100



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c) 102

d) 104

e) 108

**Answer: C**

$$57 * 22 + 38 * 18 = ? * 19$$

$$? = 102$$

**12)  $(1587 \div \sqrt{4761}) * (1209 \div \sqrt{8649}) = ?$**

a) 283

b) 287

c) 299

d) 295

e) 301

**Answer: C**

$$(1587 \div \sqrt{4761}) * (1209 \div \sqrt{8649}) = ?$$

$$23 * 13 = ?$$

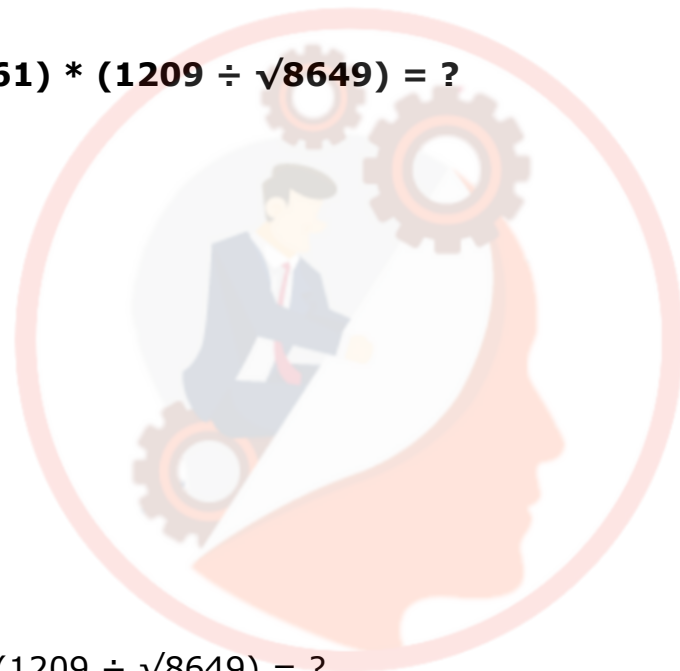
$$? = 299$$

**13) 45% of 420 + 120% of 220 = ?**

a) 453

b) 458

c) 461



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d) 467

e) 472

**Answer: A**

$$45\% \text{ of } 420 + 120\% \text{ of } 220 = ?$$

$$? = 189 + 264$$

$$? = 453$$

**14)  $\sqrt{4489} + \sqrt{1849} - \sqrt{841} = ?^2$**

a) 7

b) 5

c) 8

d) 6

e) 9

**Answer: E**

$$\sqrt{4489} + \sqrt{1849} - \sqrt{841} = ?^2$$

$$67 + 43 - 29 = ?^2$$

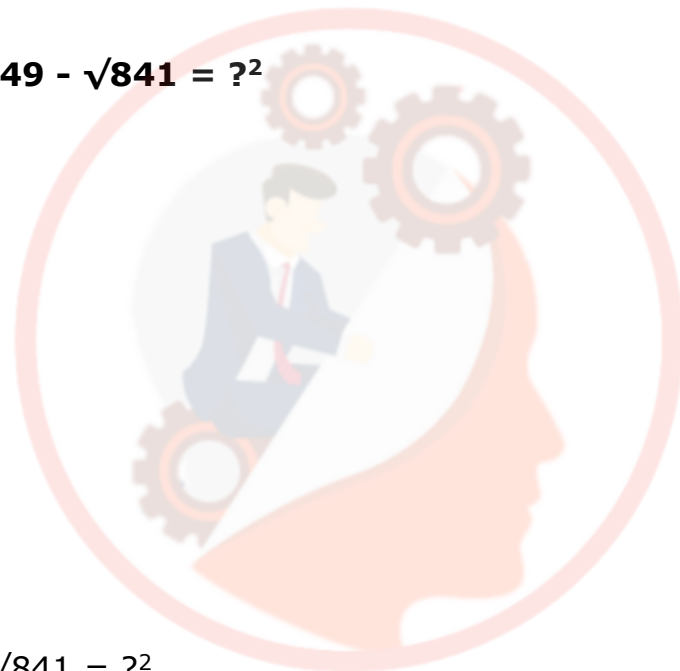
$$? = 9$$

**15)  $26 * 23 - 13 * 19 = ? + 7 * 12$**

a) 267

b) 232

c) 248



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d) 236

e) 240

**Answer: A**

$$26 * 23 - 13 * 19 = ? + 7 * 12$$

$$? = 267$$

**16)  $(2324 \div 73) * (1095 \div 83) = ? * 35$**

a) 17

b) 11

c) 15

d) 18

e) 12

**Answer: E**

$$(2324 \div 73) * (1095 \div 83) = ? * 35$$

$$? = 12$$

**17) 65% of 420 – 85% of 240 = ?**

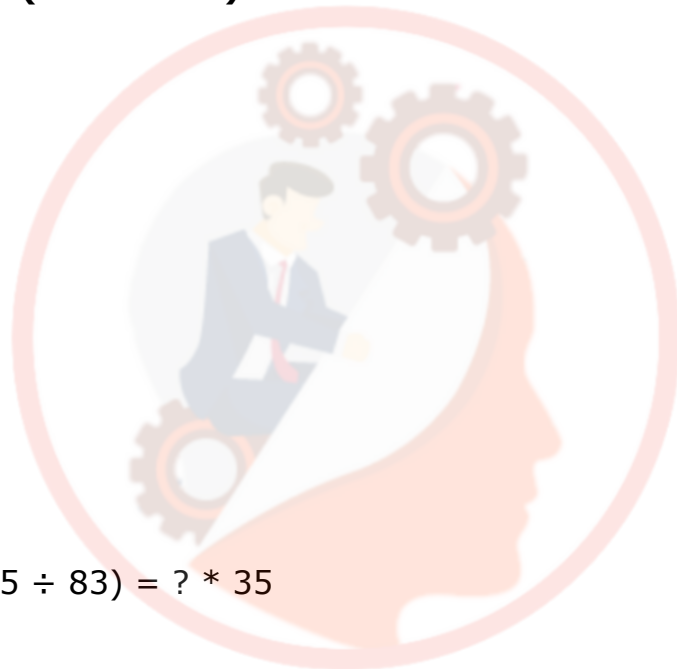
a) 62

b) 66

c) 64

d) 69

e) 72



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**Answer: D**

$$65\% \text{ of } 420 - 85\% \text{ of } 240 = ?$$

$$? = 69$$

### **Mixture and allegation**

**18) x liters of oil is Rs.90 per liter and 60 liters of water is Rs.(x + 10) per liter. If sold the mixture of oil and water for Rs.48 per liter making a total profit of 60%, then find the value of x?**

- a) 12
- b) 15
- c) 10
- d) 18
- e) 20

**Answer: C**

$$\text{CP of one liters of mixture} = 48 * 100/160 = \text{Rs.30}$$

$$(90 * x + 60 * (x + 10))/(x + 60) = 30$$

$$90x + 60x + 600 = 30x + 1800$$

$$120x = 1200$$

$$x = 10$$

### **Time, speed and distance**

**19) Car A started from Chennai towards Bangalore at 8 am and car B started from Bangalore towards Chennai at 8 am. If the distance between Chennai and Bangalore is 960 km and they met at 4 pm and**

**car B covers 192 km more than that of car A, then find the speed of car A?**

- a) 36 kmph
- b) 45 kmph
- c) 40 kmph
- d) 48 kmph
- e) 52 kmph

**Answer: D**

Distance travelled by car A =  $x$

Distance covered by car B =  $x + 192$

$$x + 192 + x = 960$$

$$x = 384$$

$$\text{Speed of car A} = 384/8 = 48 \text{ kmph}$$

**Profit and loss**

**20) Ratio of the marked to cost price of the article is 7:5. If the shopkeeper offers two successive discounts of 20% and Rs.450 while he gets the profit of 4.5%, then find the selling price of the article?**

- a) Rs.6240
- b) Rs.6270
- c) Rs.6300
- d) Rs.6330

e) None of these

**Answer: B**

$$7x * 80/100 - 450 = 5x * 104.5/100$$

$$5.6x - 450 = 5.225x$$

$$x = 1200$$

$$\text{SP of the article} = 5 * 1200 * 104.5/100$$

$$= \text{Rs.}6270$$

**Ages**

**21) Ratio of the ages of A and B is 5:4. After 8 years, the ratio of the ages of B and C is 3:1. Difference between the age of A and C is 31 years, then find the age of C after 6 years?**

a) 12 years

b) 14 years

c) 16 years

d) 18 years

e) None of these

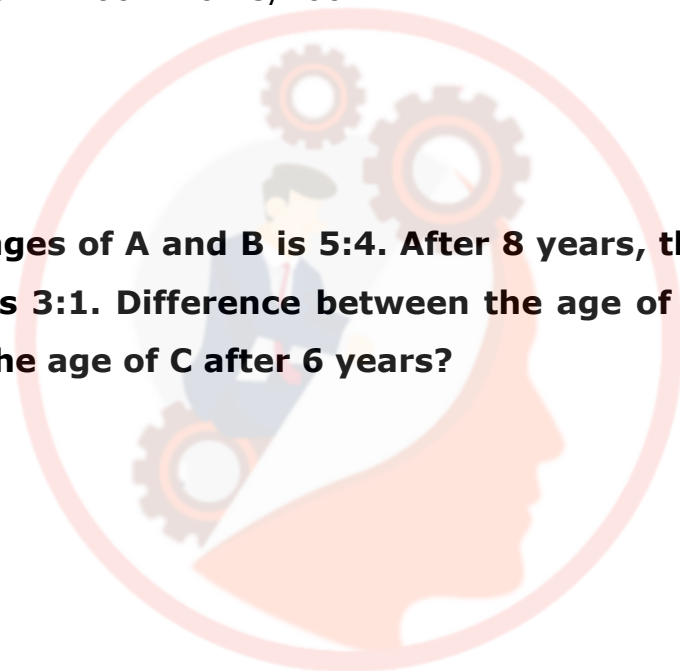
**Answer: E**

$$A = 5x$$

$$B = 4x$$

$$B \text{ after 8 years} = 4x + 8$$

$$C \text{ after 8 years} = 1/3 * (4x + 8) = (4x + 8)/3$$



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$$5x - ((4x + 8)/3 - 8) = 31$$

$$15x - 4x - 8 + 24 = 93$$

$$x = 7$$

$$\text{C's age after 6 years} = (4 * 7 + 8)/3 - 8 + 6 = 10 \text{ years}$$

### Time and work

**22) Ratio of the efficiency of A to B and C together is 2:3. If the efficiency of B is 50% more than C and C alone complete the half of the work in 15 days, then find the time taken by A alone to complete the work?**

- a) 15 days
- b) 18 days
- c) 12 days
- d) 24 days
- e) None of these

**Answer: B**

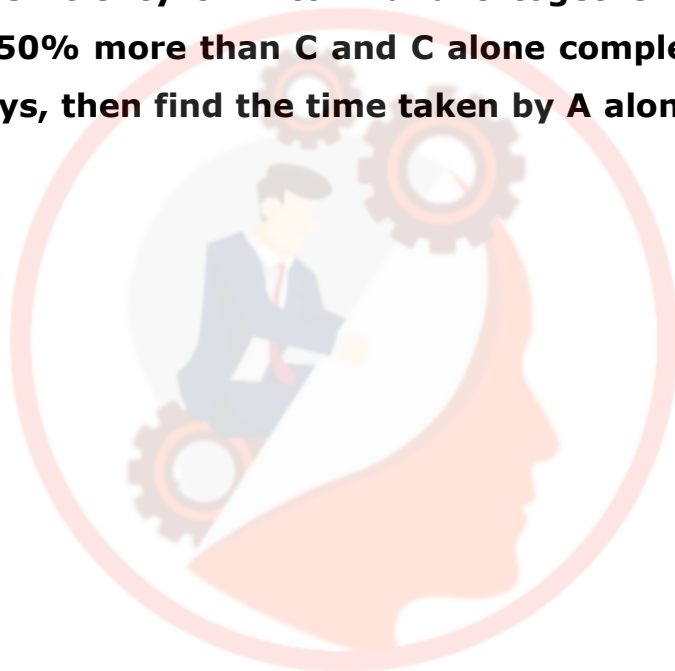
$$B = 100/150 * (15 * 2) = 20$$

$$B + C = 1/20 + 1/30 = 1/12$$

$$\text{A alone complete the work} = 3/2 * 12 = 18 \text{ days}$$

### SI AND CI

**23) Sahul invests Rs.x in a simple interest scheme at the rate of R% per annum for 4 years. If the ratio of the interest received by Sahul to x is 3:5, then find the value of R?**



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- a) 12
- b) 10
- c) 15
- d) 18
- e) 20

**Answer: C**

$$3y = 5y * R * 4/100$$

$$R = 15$$

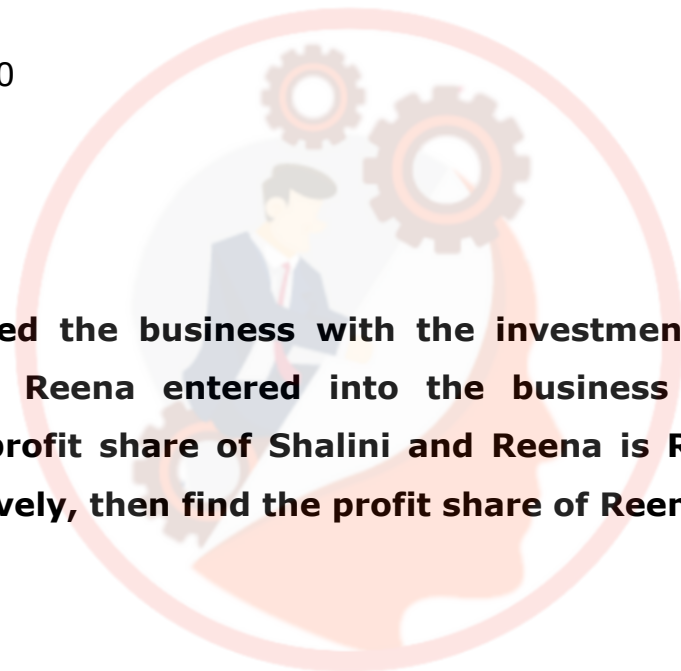
### **Partnership**

**24) Shalini started the business with the investment of Rs.3600. After 4 months, Reena entered into the business by investing Rs.3900. If the profit share of Shalini and Reena is Rs.(x + 1000) and Rs.x respectively, then find the profit share of Reena?**

- a) Rs.2600
- b) Rs.3200
- c) Rs.3900
- d) Rs.1300
- e) None of these

**Answer: A**

$$\begin{aligned} \text{Profit ratio of Shalini and Reena} &= 3600 * 12 : 3900 * 8 \\ &= 18 : 13 \end{aligned}$$



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$$\text{Profit share of Reena} = \frac{13}{5} * (x + 1000 - x) = \text{Rs.2600}$$

### Mensuration

**25) The ratio of the length to breadth of the rectangular room is 5:3 and the side of the square is 15 cm. If the area of the rectangular room is 150 cm<sup>2</sup> more than the area of the square, find the perimeter of the rectangular room?**

- a) 80 cm
- b) 90 cm
- c) 100 cm
- d) 120 cm
- e) 60 cm

**Answer: A**

$$\text{Area of the rectangular room} = 15 * 15 = 225$$

$$\text{Area of rectangular} = 225 + 150 = 375$$

$$5x * 3x = 375$$

$$x = 5$$

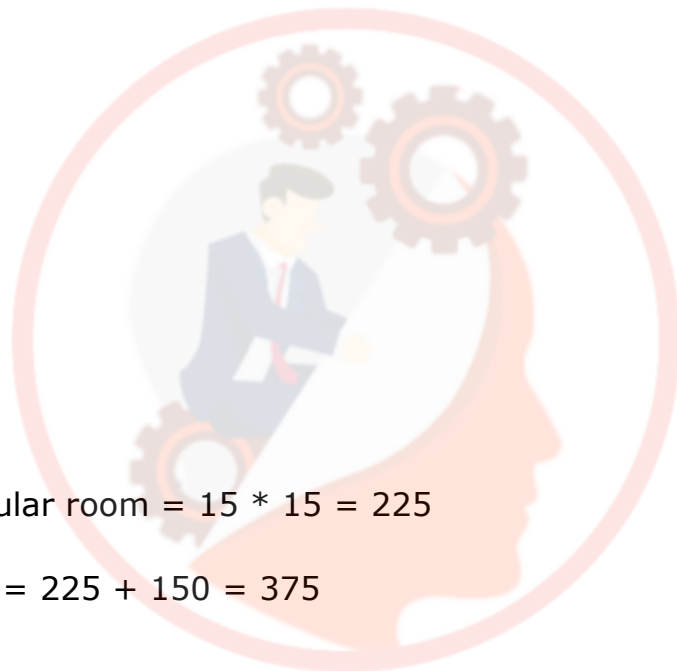
$$\text{Length of the rectangular room} = 5 * 5 = 25 \text{ cm}$$

$$\text{Breadth of the rectangular room} = 5 * 3 = 15 \text{ cm}$$

$$\text{Perimeter of the rectangular room} = 2 * (25 + 15) = 80 \text{ cm}$$

### Mensuration

**26) If the height of the equilateral triangle is  $5\sqrt{3}$  cm, then find the area of the equilateral triangle?**



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- a)  $24\sqrt{3} \text{ cm}^2$
- b)  $25\sqrt{3} \text{ cm}^2$
- c)  $32\sqrt{3} \text{ cm}^2$
- d)  $27\sqrt{3} \text{ cm}^2$
- e)  $30\sqrt{3} \text{ cm}^2$

**Answer: B**

Height of the equilateral triangle =  $5\sqrt{3} \text{ cm}$

$$5\sqrt{3} = \frac{\sqrt{3}}{2} * a$$

$$a = 10 \text{ cm}$$

$$\text{Area of equilateral triangle} = \frac{\sqrt{3}}{4} * a * a$$

$$= \frac{\sqrt{3}}{4} * 10 * 10 = 25\sqrt{3} \text{ cm}^2$$

### **Boat and stream**

**27) A boat can travel 680 km upstream and downstream in 88 hours. If the speed of boat in downstream is 24 kmph more than the speed of upstream, then find the time taken by the boat to cover 330 km in still water?**

- a) 12 hours
- b) 15 hours
- c) 18 hours
- d) 20 hours
- e) None of these

**Answer: B**

$$\text{Speed of stream} = 24/2 = 12 \text{ kmph}$$

$$680/(x + 12) + 680/(x - 12) = 88$$

$$85(x - 12 + x + 12) = 11 * (x^2 - 12^2)$$

$$170x = 11x^2 - 1584$$

$$x = 22$$

$$\text{Required time} = 330/22 = 15 \text{ hours}$$

**Ages**

**28) Ratio of the ages of Sachin and Dhoni after 15 years is 15:11 and the present age of Dravid is 25% more than the present age of Dhoni. If the sum of the present age of Sachin and Dravid is 110 years, then find the present age of Dhoni?**

a) 40 years

b) 51 years

c) 29 years

d) 27 years

e) None of these

**Answer: A**

$$\text{Dravid:Dhoni} = 125:100 = 5:4$$

$$\text{Dhoni's age after 15 years} = 4x + 15$$

$$\text{Sachin's age after 15 years} = 15/11 * (4x + 15)$$

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$$5x + 15/11 (4x + 15) - 15 = 110$$

$$5x + 60x/11 + 225/11 - 15 = 110$$

$$x = 10$$

Present age of Dhoni =  $10 * 4 = 40$  years

### **Profit and loss**

**29) Sum of the cost price of an Eraser and Pencil is Rs.15. The shopkeeper sold an Eraser at a loss of 42.5% and the Pencil at a profit of 15%. If the selling price of an eraser and pencil is equal, then find the cost price of eraser?**

- a) Rs.8
- b) Rs.10
- c) Rs.12
- d) RS.6
- e) Rs.9

**Answer: B**

CP of a pencil =  $x$

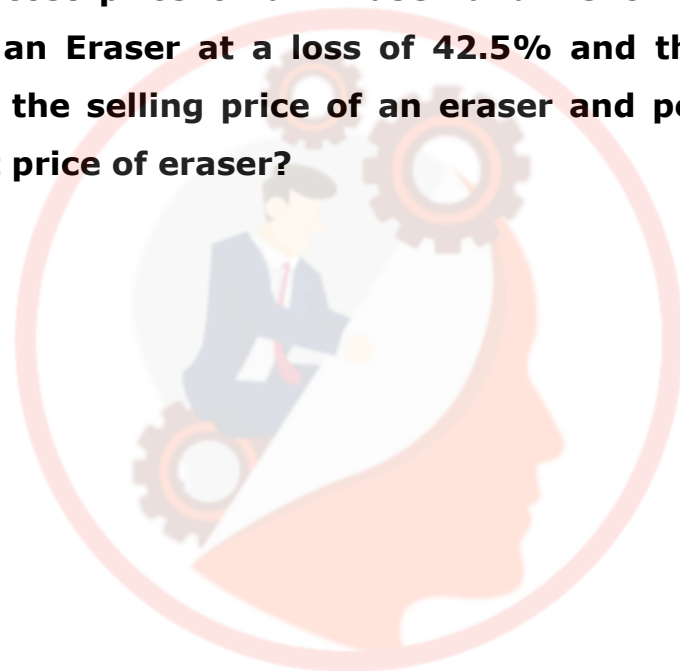
CP of an eraser =  $15 - x$

$$x * 115/100 = (15 - x) * 57.5/100$$

$$115x = 862.5 - 57.5x$$

$$x = 5$$

CP of Eraser =  $15 - 5 = 10$

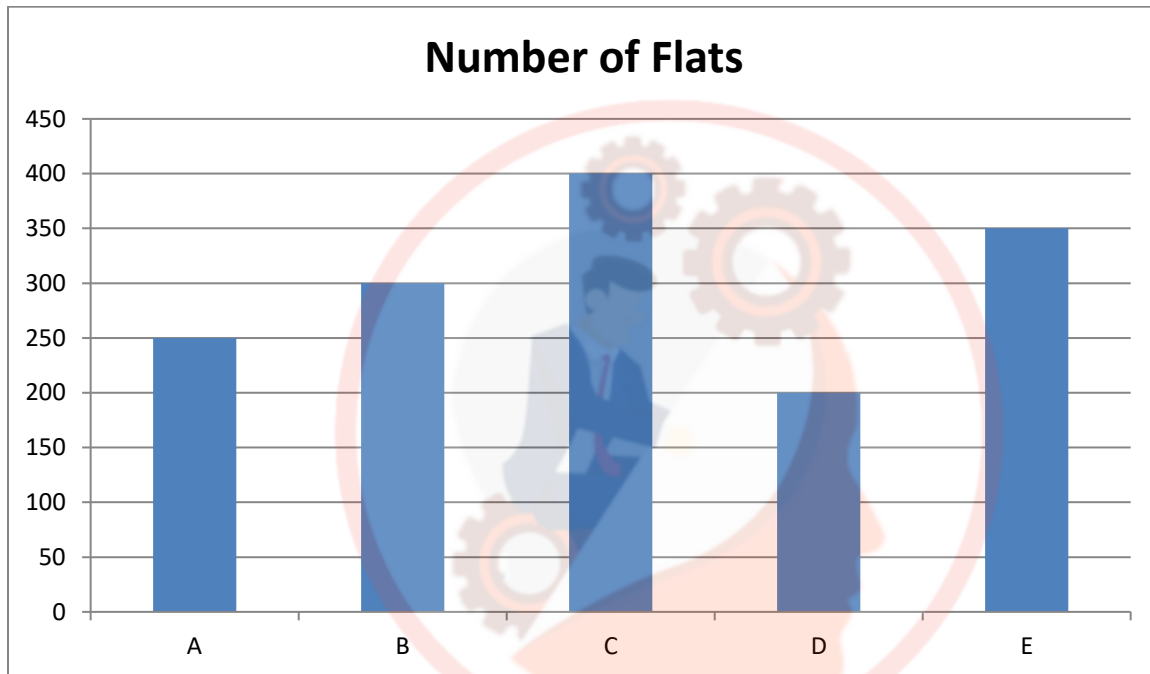


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**Directions (30-35): Bar graph**

**Directions (30-35): Study the following information carefully and answer the questions given below.**

The given bar graph shows the number of flats in five different societies – A, B, C, D and E.



**30) What is the difference between the number of flats in A and E?**

- a) 50
- b) 100
- c) 150
- d) 80
- e) 200

**Answer: B**

Required difference =  $350 - 250 = 100$

**31) The cost of a flat in A and C is Rs.2 lakh and Rs.3 lakh respectively. Find the average of the revenue collection of A and C?**

- a) Rs.760 lakh
- b) Rs.800 lakh
- c) Rs.750 lakh
- d) Rs.850 lakh
- e) Rs.700 lakh

**Answer: D**

$$\begin{aligned} \text{Required average} &= (250 * 2 + 400 * 3)/2 \\ &= 850 \text{ lakh} \end{aligned}$$

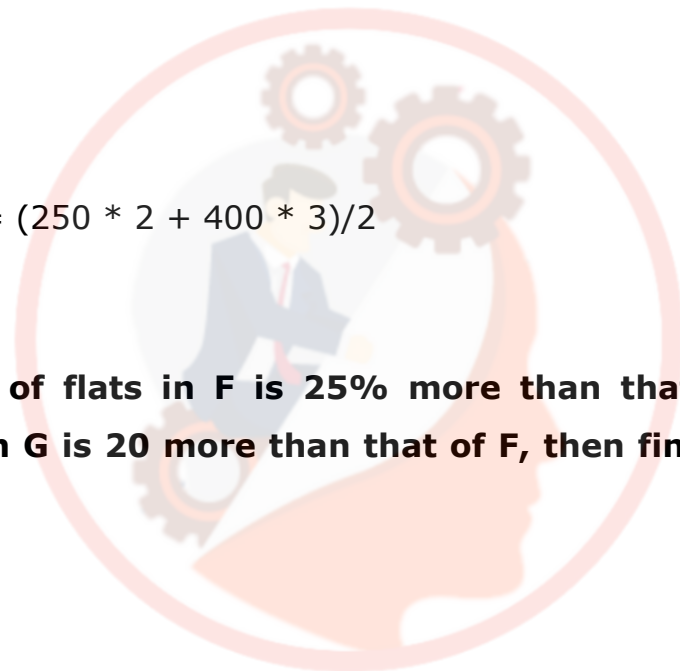
**32) The number of flats in F is 25% more than that of B. If the number of flats in G is 20 more than that of F, then find the number of flats in G?**

- a) 385
- b) 375
- c) 395
- d) 365
- e) None of these

**Answer: C**

$$\text{Number of flats in G} = 125/100 * 300 + 20 = 395$$

**33) Find the average number of flats in all the societies together?**



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- a) 250
- b) 300
- c) 200
- d) 350
- e) 400

**Answer: B**

Required average =  $(250 + 300 + 400 + 200 + 350)/5$

= 300

**34) Ratio of the number of red and black color flats in D is 3:2. Find the difference between the number of red and black flats in D?**

- a) 30
- b) 20
- c) 50
- d) 60
- e) 40

**Answer: E**

Required difference =  $1/5 * 200 = 40$

**35) The number of flats in A and E together is what percent of the number of flats in B and C together?**

- a) 85.7%
- b) 87.5%

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c) 89.5%

d) 83.5%

e) 80.5%

**Answer: A**

$$\text{Required \%} = (250 + 350)/(300 + 400) * 100$$

$$= 85.71\%$$

**Directions (36-40): Table chart**

**Directions (36-40): Study the following information carefully and answer the questions given below.**

The given table shows the number of dancers and painters in five different academies.

<b>Academy</b>	<b>Dancers</b>	<b>Painters</b>
<b>A</b>	<b>120</b>	<b>100</b>
<b>B</b>	<b>160</b>	<b>120</b>
<b>C</b>	<b>180</b>	<b>240</b>
<b>D</b>	<b>100</b>	<b>180</b>
<b>E</b>	<b>200</b>	<b>220</b>

**36) The number of dancers in F is 30% more than that of B and the number of painters in F is 40% more than that of D. Find the difference between the number of painters and dancers in F?**

a) 44

b) 48

c) 52

d) 56

e) 60

**Answer: A**

Required difference =  $180 * 140/100 - 160 * 130/100 = 44$

**37) What is the ratio of the number of dancers in A and E together to the number of painters in B and C together?**

a) 7:8

b) 8:9

c) 11:12

d) 15:16

e) None of these

**Answer: B**

Required ratio =  $(120 + 200):(120 + 240)$

= 320:360

= 8:9

**38) The number of painters and dancers in E is what percent of the number of painters in A, C and E together?**

a) 70%

b) 80%

c) 90%

d) 75%

e) 85%



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**Answer: D**

$$\text{Required \%} = (200 + 220)/(100 + 240 + 220) * 100$$

$$= 75\%$$

**39) The number of dancers in F is equal to the average number of dancers in C, D and E. If the ratio of the number of dancers and painters in F is 8:9, then find the number of painters in F?**

a) 140

b) 180

c) 160

d) 200

e) 150

**Answer: B**

$$\text{Number of dancers in F} = (180 + 100 + 200)/3 = 160$$

$$\text{Number of painters in F} = 160 * 9/8 = 180$$

**40) Find the average number of painters in all the academies together?**

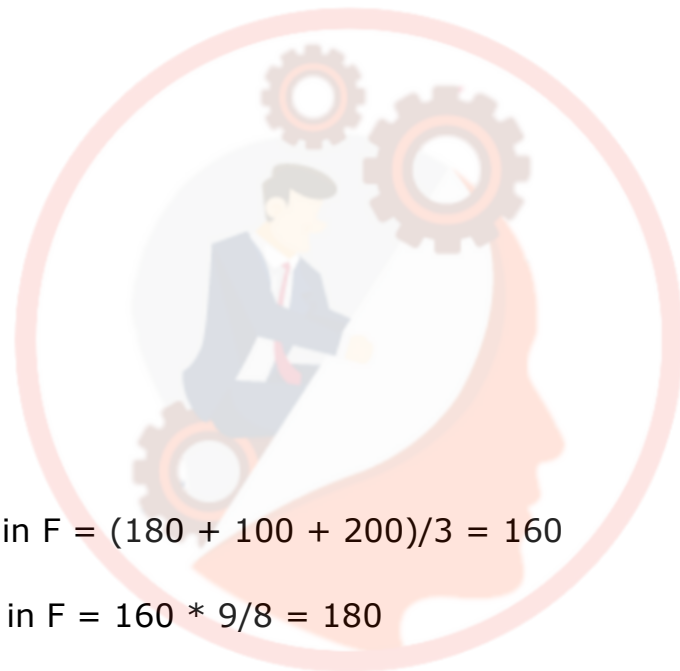
a) 168

b) 170

c) 172

d) 176

e) None of these



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**Answer: C**

Required average =  $(100 + 120 + 240 + 180 + 220)/5$

= 172



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