

# FOUNDATION

①

Class: VII. MATHEMATICS

## 7. COMPARING QUANTITIES

### Teaching Task (Jee main)

01. A's share =  $\frac{5}{12} \times 720 = 300$   
B's share =  $\frac{7}{12} \times 720 = 420$   
Difference = Rs 420 - Rs 300 = Rs 120  
Ans: B
02. A's share =  $\frac{5}{12} \times 4800 = \text{Rs } 2000$   
Ans: C
03. 8% of 45,000  
 $= \frac{8}{100} \times 45000 = 3600$   
 $\therefore$  New population = 45000 + 3600  
 $= 48600$   
Ans: B
04.  $\frac{12.5}{100} \times 800 = \text{Rs } 100$   
New price = 800 + 100 = Rs 900  
Ans: C
05.  $\frac{20}{100} \times 400 = \text{Rs } 80$   
 $\therefore$  New price = 400 - 80 = Rs 320  
Ans: B
06.  $\frac{10}{100} \times 25000 = 2500$   
Now, salary = 25000 + 2500 = 27500  
Now  $\frac{10}{100} \times 27500 = 2750$   
New salary = 27500 - 2750 = Rs 24,750  
Ans: B

07.  $\frac{10}{100} \times 50,000 = Rs 5000$

$\therefore 50,000 - 5000 = 45,000$

$\frac{20}{100} \times 45000 = 9000$

$\therefore \text{New population} = 45000 + 9000$   
 $= \cancel{54} 36,000$

Ans: B

08.  $\frac{10}{100} \times 1200 = 120$

$\therefore S.P = 1200 - 120 = Rs 1080$

Ans: C

09.  $\frac{25}{100} \times 120 = 30$

$S.P = 120 + 30 = Rs 150$

Ans: C

10.  $\frac{20}{100} \times 24,000 = 4800$

price of TV =  $24000 - 4800$   
 $= 19200$

$\frac{25}{100} \times 19200 = 4800$

New price =  $19200 + 4800$   
 $= Rs 24,000$

Ans: A

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11.  $CP = Rs 500, SP = Rs 600$

A) profit =  $600 - 500 = Rs 100$  ✓

B) profit % =  $\frac{100}{500} \times 100 = 20\%$  ✓

C)  $SP = 120\% \text{ of } C.P = \frac{120}{100} \times 500 = 600$  ✓

Ans: A, B, C

12. Let the original No. be 100.

(3)

Increases by 10% =  $\frac{10}{100} \times 100 = 10$ .

∴ New Number = 110.

Decreases by 10% =  $110 - (10\% \text{ of } 110)$

$$= 110 - 11 = 99.$$

The final value (99) is less than the original value (100). which is a 1% decrease

Ans: A, D

13 Statement I:

$$\text{profit \%} = \frac{120 - 100}{100} \times 100 = \frac{20}{100} \times 100 = 20\%$$

True  
(False)

Statement II: Conceptual (False)

Ans: C

14 Statement I: Let the number be 100.

$$\downarrow 20\% = \frac{20}{100} \times 100 = 20$$

$$\text{Now, Number} = 100 - 20 = 80.$$

$$\uparrow 20\% = \frac{20}{100} \times 80 = 16$$

$$\text{Now, Number} = 80 + 16 = 96. \quad (\text{True})$$

Statement II: Conceptual (True)

Ans: A

15 Assertion: Mathematically (True)

Reason: Conceptual (True)

Ans: A

16 Assertion: Let the

16. Assertion: Let the original no = 100.

(4)

↑ 10% → Number = 110.

↑ 10% →  $\frac{10}{100} \times 110 = 11$

Now, Number = 121.

Increase is 21%. (False)

Reason: Conceptual (False)

Ans.

17.  $\text{profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100 = \frac{2000}{10000} \times 100 = 20\%$

18.  $10,000 + 2000 = 12000$

Ans: A

19. Let the C.P = ₹ x

Loss = 20%.

⇒ S.P at loss = 80% of C.P =  $0.8x$

If sold for 120 more, gain = 10%.

New S.P = 110% of C.P =  $1.1x$

According to given data

$$1.1x - 0.8x = 120$$

$$\Rightarrow 0.3x = 120 \Rightarrow x = 400 \quad \text{Ans: B}$$

20. S.P. at 20% loss = 80% of 400 = ₹ 320

Ans: B

21. Final value = original value  $\times \left(1 - \frac{x^2}{10000}\right)$   
 $= 200 \times \left(1 - \frac{20^2}{10000}\right)$   
 $= 192$

Ans: 192

22. Maths : Science = 7 : 9 = m : 126 (6)

$$\begin{aligned} 9 \text{ parts} &= 126 \\ \Rightarrow 1 \text{ part} &= \frac{126}{9} \quad \left| \quad m = \frac{7 \times 126}{9} = 98 \right. \end{aligned}$$

Ans. 98

23 a)  $A : B = 3 : 4$   
 $B : C = 2 : 5$   
 $A : B : C = 3 : 4 : 10$  }  $A : C = 3 : 10 (Y)$

b) profit % =  $\frac{600 - 500}{500} \times 100$   
 $= 20\% (P)$

c) % decrease =  $\frac{200 - 160}{200} \times 100$   
 $= 20\% (P)$

d) % Increase =  $\frac{500 - 400}{400} \times 100$   
 $= 25\% (Q)$

Ans. X, P, P, Q

24 a) profit % =  $\frac{1000 - 800}{800} \times 100$   
 $= 25\% (X)$

b) loss % =  $\frac{400 - 350}{400} \times 100$   
 $= 12.5\% (P)$

c) profit % =  $\frac{250 - 200}{200} \times 100 = 12.5\% (P)$

d) loss % =  $\frac{600 - 525}{600} \times 100$   
 $= 12.5\% (P)$

Ans. X, P, P, P

# LEARNERS TASK (CLUE'S) ⑥

|     |            |        |
|-----|------------|--------|
| 01. | Conceptual | Ans: A |
| 02. | Conceptual | Ans: B |
| 03  | Conceptual | Ans: D |
| 04  | Conceptual | Ans: C |
| 05  | Conceptual | Ans: A |
| 06  | Conceptual | Ans: B |
| 07. | Conceptual | Ans: C |
| 08  | Conceptual | Ans: A |
| 09  | Conceptual | Ans: B |
| 10. | Conceptual | Ans: B |

## JEE MAINS

|     |                                                                    |        |
|-----|--------------------------------------------------------------------|--------|
| 01. | Larger number = $\frac{5}{8} \times 64 = 40$                       | Ans: C |
| 02  | $8 : x = 24 : 54$<br>$\Rightarrow x = \frac{8 \times 54}{24} = 18$ | Ans: B |
| 03  | $a : b = 2 : 3$<br>$b : c = 4 : 5$<br>$a : b : c = 8 : 12 : 15$    | Ans: A |
| 04  | $\frac{540}{900} \times 100 = 60\%$                                | Ans: C |
| 05  | profit % = $\frac{300 - 250}{250} \times 100 = 20\%$               | Ans: C |

06

$$\text{gain \%} = \frac{S.P - C.P}{C.P} \times 100$$

(7)

$$8\% = \frac{S.P - 750}{750} \times 100$$

$$\Rightarrow S.P = \text{Rs } 810$$

Ans: B

07

$$\text{Loss \%} = \frac{C.P - S.P}{C.P} \times 100$$

$$\Rightarrow 20 = \frac{C.P - 480}{C.P} \times 100$$

$$\Rightarrow C.P = 600$$

Ans: D

08

$$\text{profit \%} = \frac{1800 - 1500}{1500} \times 100$$

$$= 20\%$$

Ans: C

09.

$$\text{Let income} = \text{Rs. } x$$

$$15\% \text{ of } x = 1800$$

$$\Rightarrow \frac{15}{100} \times x = 1800$$

$$x = 12000$$

Ans: C

10.

$$\text{profit \%} = \frac{S.P - C.P}{C.P} \times 100$$

$$\Rightarrow 25\% = \frac{S.P - 920}{920} \times 100$$

$$\Rightarrow S.P = \text{Rs } 1150$$

Ans: C

(JEE ADVANCED)

11.

$$A) \frac{a}{b} = \frac{4}{5} \checkmark$$

$$C) a:b = 20:25 \checkmark$$

$$B) 5a = 4b \checkmark$$

Ans: A, B, C



12. A)  $\text{profit \%} = \frac{S.P - C.P}{C.P} \times 100$

⑧

$$\Rightarrow 20 = \frac{450 - C.P}{C.P} \times 100$$

$$\Rightarrow C.P = Rs 375 \checkmark$$

B)  $\text{profit} = 450 - 375 = 75 \checkmark$

C)  $\text{profit \%} = 20\% \text{ of } 450$

$$= \frac{20}{100} \times 450$$

$$= 90\% \times$$

D)  $S.P = \frac{120}{100} \times 375 = 450 \checkmark$  Ans: A, B, D

13. Statement I:  $A : B = 2 : 3$

$$B : C = 4 : 5$$

$$A : B : C = 8 : 12 : 15$$

$$A : C = 8 : 15 \text{ (True)}$$

Statement II: Conceptual (False)

Ans: C

14. Statement I: Mathematically (False)

Statement II: Conceptual (True)

Ans: D

15. Assertion: Conceptual (True)

Reason: Conceptual (True)

Ans: A

16. Assertion:  $\frac{A}{B} = \frac{4}{5} \Rightarrow \frac{A}{B} + 1 = \frac{4}{5} + 1$

$$\Rightarrow \frac{A+B}{B} = \frac{9}{5} \text{ (True)}$$

Reason: Conceptual (False)

Ans: C

17. No. of Boys =  $\frac{5}{8} \times 48 = 30$  (9) Ans: B

18. No. of girls =  $\frac{3}{8} \times 48 = 18$

New girls joined = 6

$\therefore$  present girls =  $18 + 6 = 24$ .

Now, Ratio Boys: girls =  $30 : 24$  or  $5 : 4$   
Ans: C

19. First number =  $\frac{3}{8} \times 64 = 24$ .

Second number =  $64 - 24 = 40$ . Ans: A

20. 25% of 24 =  $\frac{25}{100} \times 24 = 6 \rightarrow$  Number =  $24 + 6 = 30$

25% of 40 =  $\frac{25}{100} \times 40 = 10 \rightarrow$  Number =  $40 + 10 = 50$

$\therefore$  New ratio =  $30 : 50 = 3 : 5$  Ans: A

21. gain % =  $\frac{S.P - C.P}{C.P} \times 100$

$\Rightarrow 20 = \frac{240 - C.P}{C.P} \times 100 \Rightarrow C.P = 200$   
Ans: 200

22. Loss % =  $\frac{C.P - S.P}{C.P} \times 100$

$12.5 = \frac{400 - S.P}{400} \times 100 \Rightarrow S.P = 350$   
Ans: 350

$$23 \quad a) 75:300 = 1:4 (p)$$

(10)

$$b) 2 \times 60:30 = 4:1 (q)$$

$$c) \frac{A}{B} = \frac{n}{m}$$

$$\Rightarrow \frac{A}{B} + 1 = \frac{n}{m} + 1$$

$$\Rightarrow (A+B):B = (m+n):m (s)$$

$$d) 7x=14y \Rightarrow x:y = 2:1 (r) \quad \text{Ans: p, q, s, r}$$

$$24 \quad a) 25\% \text{ of } 400 = \frac{25}{100} \times 400 = 100 (q)$$

$$b) 12.5\% \text{ of } 320 = \frac{12.5}{100} \times 320 = 40 (r)$$

$$c) 40\% \text{ of } 250 = \frac{40}{100} \times 250 = 100 (q)$$

$$d) 20\% \text{ of } 600 = \frac{20}{100} \times 600 = 120 (s)$$

Ans: q, r, q, s

$\Rightarrow$  THE END  $\Leftarrow$