Chapter:- __13-Topics in Commercial Arithmetic__   __14-Average__

Q. 1) Choose the correct option.

1. If the Selling Price (SP) is greater than the Cost Price (CP), there is:
   - a) Loss
   - b) Profit ✓
   - c) No profit no loss

2. A shopkeeper buys a toy for ₹200 and sells it for ₹250. What is the profit?
   - a) ₹30
   - b) ₹40
   - c) ₹50 ✓

3. The marks obtained by a student in 3 subjects are 60, 70, and 80. What is the average marks?
   - a) 65
   - b) 70 ✓
   - c) 75

4. SP = CP _____
   - a) + Profit ✓
   - b) - Profit
   - c) + Loss

5. 80 % of 300 is _____
   - a) 8300
   - b) 240 ✓
   - c) 24000

6. CP of an article is ₹600. It is sold at a profit of ₹75. The SP is:
   - a) ₹650
   - b) ₹675 ✓
   - c) ₹680

Q.2) Fill in the blanks:

1. SP = Rs 900, Loss = Rs 70, CP = __970__ .

2. 12.20 = __1220__ %

3. If the average of 4 children's ages is 12 years, their total age is __48__ years.

4. 1 score = __20__ items

5. 1 gross = __12__ dozen

6. The average of 5 numbers is 10, their sum is __50__ .

7. Overheads such as repair cost, transportation charges, etc., are added to the __Cost__ price.

Q.3) Write "T" for True and "F" False statements.

1. Average is always greater than the largest number. __F__

2. Loss occurs when SP is greater than CP __F__

3. 80 % of 1.2 kg = 960 g. __T__

4. Average = $\dfrac{Sum\ of\ numbers}{Number\ of\ addends}$. __T__

5. If average is 20 for 3 items, their total is 60. __T__

Q.4) Do as directed.

a) Find the average of First 6 multiples of 12	b) Find the average of : 55 , 50 , 48 , 27
$\dfrac{12+24+36+48+60+72}{6}$ $= \dfrac{252}{6}$ $= \boxed{42}$	$\dfrac{55+50+48+27}{4}$ $= \dfrac{180}{4}$ $= \boxed{45}$

c) Find the average of : 89, 102, 105, 99, 110	d) Find the average of First 10 EVEN numbers
$= \dfrac{89 + 102 + 105 + 99 + 110}{5}$	$= \dfrac{2+4+6+8+10+12+14+16 + 18+20}{10}$
$= \dfrac{505}{5}$	$= \dfrac{110}{10}$
$= \boxed{101}$	$= \boxed{11}$

Q.5) Word problems.

1) A trader buys a chair for ₹1,250. He sells it at a loss of ₹150.

(a) Find the SP	b) How much more should he sell it to make a profit of ₹100?

Loss = CP - SP
 SP = CP - Loss
 	
 SP : ₹1 2 5 0
   - ₹   1 5 0
    ——————
      1 1 0 0
 	
 $\boxed{SP = ₹1100}$
	CP = ₹ 1250 Profit = ₹ 100 SP = ?
	 Profit = SP - CP
	 SP = Profit + CP
	 SP = ₹100 + ₹1250
	 $= \boxed{₹1350}$
	
	 He needs to sell it at ₹ 1350

2) A shopkeeper buys 10 pens for ₹18 each and sells all of them for ₹200. Find the total profit or loss.

Cost of 1 Pen = ₹ 18

Cost of 10 Pens = ₹ 18 × 10

$= \boxed{₹ 180}$

SP = ₹ 200

SP > CP = Profit

Profit = SP - CP

$= ₹ 200 - ₹ 180$

Profit $= \boxed{₹ 20}$

3) At a factory, three workers produced 87, 93 and 102 units respectively in one day. What is the average production in units of these three workers?

Production of worker-1 = 87 units

              worker-2 = 93 units

              worker-3 = 102 units

Average $= \dfrac{87 + 93 + 102}{3}$

$= \dfrac{282}{3}$

$= \boxed{94}$

4) Rashid incurred a loss of ₹ 590 on a chair. He sold at ₹ 1,280. What was the cost price of the chair?

Loss = ₹ 590
SP = ₹ 1280

Loss = CP - SP

CP = Loss + SP

= ₹ 590 + ₹ 1280

= ₹ 1870

Cost Price of the chair was ₹ 1870

5) A painting was bought for ₹ 45,895. The frame was changed for ₹ 2,060. It was finally sold for ₹ 51,080. What was the loss or gain?

Cost of Painting = ₹ 45,895
Cost of frame = ₹ 02 060
Total cost = ₹ 47 955

SP = ₹ 51,080

SP > CP = Profit

Profit = SP - CP

= ₹ 5 1 0 8 0
 - ₹ 4 7 9 5 5
 ₹ 0 3 1 2 5

Profit = ₹ 3 1 2 5

7) A shopkeeper bought a box of apples for ₹ 600 and sold it at a profit of 10%. Find the selling price.

CP = ₹ 600
Profit % = 10%
  10% of 600

= $\frac{10}{100} \times 600$

Profit = ₹ 60

Profit = SP - CP

SP = Profit + CP

SP = ₹ 60 + ₹ 600

= ₹ 660

Selling Price of the box of apple was ₹ 660