

CHAPTER 1 : FRACTIONS IN DISGUISE

CHALLENGE ZONE (PAGE - 8)

1. No, we don't get the number 100 back because the base value changes after the increasing 100 by 10% first.

Increase 100 by 10% we get = 110

Decrease the result by 10% = $\frac{90}{100} (110) \Rightarrow 99$

We get 99, not 100.

EXERCISE 1.1 (PAGE-8)

1. (a) $\frac{1}{4} \times 100 = 25\%$
(b) $\frac{2}{5} \times 100 = 40\%$
(c) $\frac{17}{20} \times 100 = 85\%$
(d) $\frac{3}{8} \times 100 = 37.5\%$
2. % of fruits that are oranges = $\frac{12}{25} \times 100 = 48\%$
3. Saved money = $\frac{75}{100} \times 2000 = ₹ 1500$
4. Pages yet to be read = $\frac{40}{100} \times 250 = 100$ pages
5. Number of English books = $\frac{80}{100} \times 150 = 120$
6. Percentage of white marbles = $\frac{15}{25} \times 100 = 60\%$
7. A = 38% C = 72%
B = 55% D = 93%

CHALLENGE ZONE (PAGE-10)

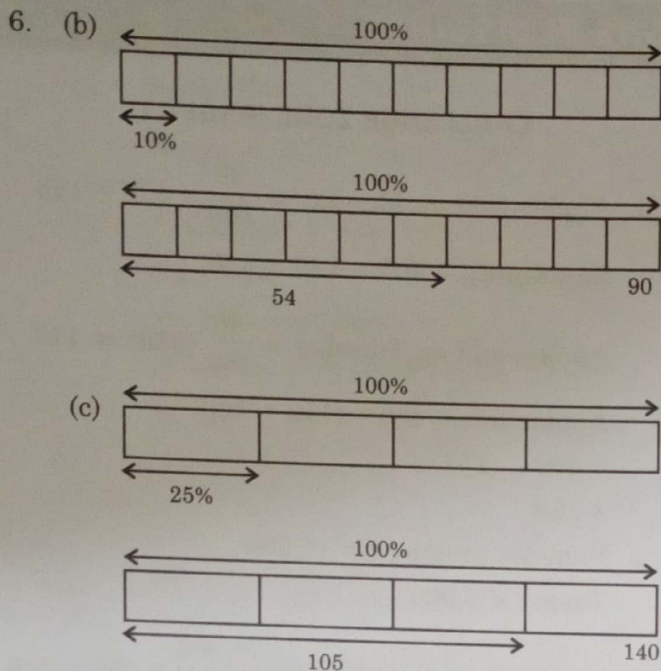
2. TQ	100	200	50	80	10	400
10%	10	20	5	8	1	40
20%	20	40	10	16	2	80
5%	5	10	2.5	4	0.5	20
25%	25	50	12.5	20	2.5	100

CHALLENGE ZONE (PAGE-11)

3. Apples sold on Monday = $\frac{30}{100} \times 400 = 120$
Remaining = $400 - 120 = 280$
Apples sold on Tuesday = $\frac{40}{100} (280) \Rightarrow 112$
Apples left = $400 - (112 + 120) = 400 - (232) = 168$
4. Vehicles produced = 10,000
Target = 4,000
Production percentage = $\frac{10,000}{4,000} \times 100 = 250\%$

EXERCISE 1.2 (PAGE-12)

1. (a) $\frac{0.125}{1000} = \frac{5}{40} = \frac{1}{8} \times 100 = 12.5\%$ (ii)
(b) $80\% = \frac{80}{100} = \frac{4}{5}$ (i)
(c) $0.05 = \frac{5}{100} = \frac{1}{20}$ (iii)
2. Present students = 85% of 1200
 $= \frac{85}{100} \times 1200 = 1020$
3. Calories that come from fat = $\frac{30}{100} \times 250 = 75$ calories
4. Total pay for the month = $\frac{120}{100} \times 20,000 = ₹ 24000$
5. (a) $175\% = \frac{175}{100} = \frac{7}{4}$
(b) $0.6\% = \frac{6}{1000} = \frac{3}{500}$
(c) $220\% = \frac{220}{100} = \frac{11}{5}$



7. (a) < (b) <
 (c) < (d) <
 (e) > (f) >

8. 10% of a day = $\frac{10}{100} \times 24 \text{ hrs} = 2.4 \text{ hrs}$

1% of a week = $\frac{1}{100} \times 7 \times 24 \text{ hrs}$

= $\frac{168}{100} = 1.68 \text{ hrs}$

Yes, 10% of a day is longer than 1% of a week.
 Create the questions by yourself.

9. (a) The proportion of each of the ingredients remains the same.
 (b) The weight of ingredients = 2 kg

Rava = $\frac{40}{100} \times 2 = 0.8 \text{ kg}$

Sugar = $\frac{40}{100} \times 2 = 0.8 \text{ kg}$

Ghee = $\frac{20}{100} \times 2 = \frac{40}{100} = 0.4 \text{ kg}$

EXERCISE 1.3 (PAGE-15)

1. Percentage of matches won by Team A

= $\frac{18}{25} \times 100 = 72\%$

Percentage of matches won by Team B

= $\frac{22}{30} \times 100 = 73.33\%$

Team B has better winning record.

2. Sugar Percentage in 'Healthy Juice'

= $\frac{45}{500} \times 100 = 9\%$

Sugar Percentage in 'Energy Drink'

= $\frac{25}{250} \times 100 = 10\%$

The 'Energy Drink' has more sugar.

3. Percentage increase in the fee = $\frac{4,500}{45,000} \times 100$
 = 10%

4. Books = 5,000

Discarded books = $\frac{15}{100} \times 5000 = 750$

Percentage decrease = $\frac{400}{5000} \times 100 = 8\%$

5. Profit = ₹15,000 – ₹12,000
 = ₹3,000

Profit% = $\frac{3000}{12000} \times 100 = 25\%$

6. Total sales = ₹2.5 crore = ₹25000000
 Profit = 25% ⇒ expenditure = 75%

$\frac{75}{100} \times \text{Total cost}$

= $\frac{75}{100} \times 25000000$

= ₹187,50,000

7. (d) Percentage increase in the price of petrol

= $\frac{40}{60} \times 100 = 66.66\%$

8. Rate of inflation = $\frac{4}{38} \times 100$
 = 10.53%

9. (d) Population of elephants now
 = 105% of P

= $\frac{105}{100} P = 1.05 \times P$

CHALLENGE ZONE (PAGE-16)

5. No.

Let original value be $100x$

$$100\% \text{ increase} = \frac{100}{100} \times 100x = 100x$$

Value after 100% increase = $200x$

$$50\% \text{ decrease} = \frac{50}{100} \times 200x = 100x$$

Value after 50% decrease

$$= 200x - 100x$$

$$= 100x$$

$$50\% \text{ increase in original value} = \frac{50}{100} (100x) \\ = 50x$$

$$\text{Value after 50\% increase in original value} \\ = 150x$$

6. Present value = ₹ 50,000

$$\text{Value after 1st year} = \frac{90}{100} (50,000) = ₹ 45,000$$

$$\text{Value after 2nd year} = \frac{90}{100} (45,000) = ₹ 40,500$$

Value of the machine after 2 years will be ₹ 40,500

EXERCISE 1.4 (PAGE-16)

$$1. \quad SI = \frac{5000 \times 2 \times 8}{100} \\ = ₹ 800 \\ \text{Amount} = ₹ 5000 + ₹ 800 \\ = ₹ 5800$$

$$2. \quad A = P \left(1 + \frac{r}{100} \right)^t \\ = 5000 \left(1 + \frac{8}{100} \right)^2 = 5000 (1.08)^2 \\ = ₹ 5832$$

3. Extra money earned through compounding

$$= ₹ 5832 - ₹ 5800 = ₹ 32$$

This happens because compounding gives you interest on interest.

$$4. \quad A = 1000 \left(1 + \frac{12}{100} \right)^3 \\ = 1000 (1.12)^3 \\ = ₹ 1404.93$$

5. Principal = ₹ 15,000

Rate = 9% p.a

$$\text{Time} = 1 \frac{1}{2} \text{ years}$$

6. $r = 7\%$ p.a

$$P = ₹ 50,000$$

Without compounding:

$$A = 50,000 + \frac{50,000 \times 7 \times 3}{100}$$

$$A = 50,000 + 10,500 = ₹ 60,500$$

With compounding:

$$A = 50,000 \left(1 + \frac{7}{100} \right)^3$$

$$= 50,000 (1.07)^3$$

$$= ₹ 61,252.15$$

Extra money earned when compounded

$$= ₹ 61,252.15 - 60,500$$

$$= ₹ 752.15 \text{ more}$$

7. Current population = 1.5 crore = 1,50,00,000
population after 3 years

$$= 1,50,00,000 \left(1 + \frac{3}{100} \right)^3$$

$$= 1,50,00,000 (1.03)^3$$

$$= 1,63,90,905$$

$$\text{Expected population} = 1,63,90,905$$

8. Without compounding:

$$A = 20,000 + \frac{20,000 \times 5 \times 4}{100}$$

$$= 20,000 + 4000$$

$$= ₹ 24,000$$

With compounding:

$$A = 20,000 \left(1 + \frac{5}{100} \right)^4$$

$$= 20,000 (1.05)^4$$

$$= ₹ 24,310.13$$