15/11.

Percentage:

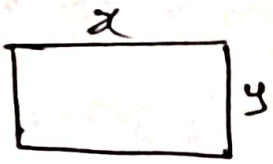
$\frac{1}{2} \to 50\%$ | $\frac{1}{3} \to 33.33\%$ | $\frac{1}{4} \to 25\%$ | $\frac{1}{5} \to 20\%$ | $\frac{1}{6} \to 16.66\%$

$\frac{1}{7} \to 14.28\%$ | $\frac{1}{8} \to 12.5\%$ | $\frac{1}{9} \to 11.11\%$ | $\frac{1}{10} \to 10\%$ | $\frac{1}{11} \to 9.09\%$

$\frac{1}{12} \to 8.33\%$ | $\frac{1}{13} \to 7.69\%$ | $\frac{1}{14} \to 7.14\%$ | $\frac{1}{15} \to 6.66\%$ | $\frac{1}{16} \to 6.25\%$

$\frac{1}{20} \to 5\%$ | $\frac{1}{24} \to 4.16\%$ | $\frac{1}{25} \to 4\%$ | $\frac{1}{30} \to 3.33\%$ | $\frac{1}{40} \to 2.5\%$

If the length of a rectangle is increased by $37\frac{1}{2}\%$ and its breadth is decreased by 20%. Find the % of damage in the area.



$A = xy$

$L' = 37\frac{1}{2}\%x + x$

$B' = y - 20\%y$

$\Rightarrow L = \frac{75}{2}x \times \frac{1}{100} + x$

$= x + \frac{3}{4} \times \frac{1}{2} x$

$= x + \frac{3}{8}x$

$L = \frac{11x}{8}$

$B = y - 20 \times \frac{1}{100} y$

$= y - \frac{1}{5}y$

$= \frac{4}{5}y$

$\therefore$ New area, $A' = L'B' = \frac{11x}{8} \times \frac{4}{5}y = \frac{11xy}{10} = 1.1xy$

% change $= \frac{A' - A}{A} \times 100 = \frac{1.1xy - xy}{xy} \times 100 = \frac{0.1}{xy} \times 100 = 10\%$

2). If the sides of a square is increased by 40%. Find the % change in the area.

= Let the side be x.

Area of square x^2

New side $= x + 40\%\, x = x + 40 \times \frac{1}{100} x = x + \frac{2}{5} x$

$= \frac{7x}{5}$

New area $= \left(\frac{7x}{5}\right)^2 = \frac{49x^2}{25}$

% change $= \frac{\frac{49x^2}{25} - x^2}{x^2} = \frac{\frac{24x^2}{25}}{x^2}$ $\frac{24}{25} \times 100 = 96\%$

---

3) A box has 100 blue balls, 50 red balls and 50 black balls. 25% of blue balls and 50% of red balls are taken away. Then, percentage of black balls at present is

(a) 25% (b) $33\frac{1}{3}$% (c) 40% (d) 50%.

---

4) The price of rice falls by 20%. How much rice can be bought now with the money that was sufficient to by 20kg of rice previously?

(a) 5kg (b) 15kg (c) 25kg (d) 30kg

---

5) Twenty-five percent of Reena's yearly income is equal to seventy-five percent of Anubhav monthly income. If anubhav yearly income is Rs. 240000, what is Reena's monthly income

(a) 60000 (b) 12000 (c) 5200 E. None of these D. Cannot be determined

5) Shreepathi's salary is 20% more than that of Rahul. If Shreepathi saves Rs. 720 which is 4% of his salary, then Rahul's salary is

(a) 15,000 (b) 12,000 (c) 10,000 (d) 20,000

→ $\frac{120 \times 4}{100} = \frac{24}{5}$

$4 \times \frac{120}{100} = 15000$

100 — 120

$\frac{24}{5}$ — 120

720 — $\frac{120 \times 5}{24}$

$5 \times 720 = 18000$

---

7) In a city, 40% of the people are illiterate and 60% are poor. Among the rich, 10% are illiterate. The percentage of the illiterate poor population is

(a) 36 (b) 60 (c) 40 (d) 50

Ill → 40 Poor → 60 Rich → 40

Rich ill = 4 Poor ill → 40 − 4 = 36

---

8) Fresh fruit contains 72% water and dry fruit contain 20% water. How much dry fruit from 100kg of fresh fruit can be obtained?

(a) 32 kg (b) 33kg (c) 30kg (d) 35 kg

72 → water 100kg

20 → dry fruit

$100 \times \frac{28}{100} = \frac{80 \times x}{100}$

$\frac{100 \times 28}{80} = x$ $x = 35$

9) Percentage of profit = $\frac{SP-CP}{CP} \times 100 = \frac{Profit}{CP} \times 100$

Percentage of loss = $\frac{CP-SP}{CP} \times 100 = \frac{loss}{CP} \times 100$

CP = 80 Profit = 25%.

$\frac{SP-CP}{CP} \times 100 = \frac{Profit}{CP} \times 100$ SP = 2100

Profit = SP − 80

$\frac{25}{100} \times 80 + 80 = SP$

10) CP → 75/- profit 25%. SP → 97.5/-

11) The owner of a furniture shop charges his customer 24% more than the cost price. If a customer paid ₹ 8339 for a computer table, then what was the cost price of the computer table

= Selling price − costprice = 24% (cost price)

$\frac{8339 - x}{8339} = 24 \rightarrow 24 \times 8339 = 8339 - x$

$CP - \frac{8339}{CP} \times 100 = \frac{24}{CP} \times 100$

$CP - 8339 = 24$

$CP =$

$x + \frac{24x}{100} = 8339$

$\frac{100x + 24x}{100} = 8339.$

$\frac{124}{100} = 8339 = x \rightarrow \frac{833900}{124} = 6725$

12) A person purchased a TV set for 16000 and a DVD player for 6250. He sold both the items together for 31150. What percentage of profit did he make?

= TV – 16,000 + 6250. = 22250 → 31150 = 9100

$\frac{9100}{22250} \rightarrow \frac{182}{445} = 40\%$

---

13) Ramu brought an old car for ₹42,000. He spent ₹13000 on repairs and sold it for ₹64900. What is his profit percentage.

cost = 42+13 = 55,000

64900 – 55000 = 9900

$\frac{9900}{55000} \times 100 = \frac{99}{550} \times 100 = \frac{990}{55} = 18\%$

---

14) A trader sells 85 meters of cloth for ₹8925 at the profit of ₹15 per metre of cloth. What is the cost price of one metre of cloth?

85 → 8925. 85×15 = 850 + 425 = 1275

= ₹90/-

---

15) A shopkeeper loses 15%, if an article is sold for ₹102. What should be the selling price of the article to gain 20%.

102 → 15% → 35% of 102 = 35

using formula $\frac{CP-SP}{Loss} =$ Percent...

16). If an article is sold at 19% profit instead of 12% profit, then the profit would be 105 more. What is the cost price.

7% → 105 more

1% → 105

100% → $\frac{105}{7} \times 100 = 1500$

17) ~~If an article is sold~~

Raman mixed 24 kg of butter at 150 per kg with 36 kg of butter at the rate of ₹125 per kg. At what price per kg should he sell the mixture to make a profit of 40% in the transaction?

$\frac{36+24}{150+125} = \frac{60}{275} = \frac{12}{55}$

3600
4500
8100

$\frac{8100}{60} = 135$

189

$150 \times 24 = 3600$

$215 \times 36 = 4500$

$CP = 3600 + 4500$

$CP = 8100$

$SP = CP + \frac{CP \times 100}{100} = 189$