

Reverse Percentages Practice



Q1. The value of an antique vase has increased by 4% and is now worth £1872. Work out the value of the vase before the increase.

$$\square \times 1.04 = 1872$$

$$\frac{1872}{1.04} = 1800$$

Answer: £1800

[2 marks]

Q2. In a sale, the normal price of a shirt is reduced by 30%. The sale price of the shirt is £6.30. Work out the normal price of the shirt.

$$\square \times 0.7 = 6.30$$

$$\frac{6.30}{0.7} = 9$$

Answer: £9

[2 marks]



Q3. In a supermarket, bags of sugar have been increased by 6% due to the cost of importing the product from abroad. Given that bags now cost £1.59, how much did the supermarket charge before the price increase?

$$\square \times 1.06 = 1.59$$
$$\frac{1.59}{1.06} = \pounds 1.50$$

Answer: £1.50

[2 marks]

Q4. In a sale, normal prices are reduced by 35%. If the normal price of a coat is reduced by £52.50, work out the normal price of the coat.

$$\begin{array}{l} \div 35 \\ \times 100 \end{array} \quad \left. \begin{array}{l} 35\% = 52.50 \\ 100\% = 150 \end{array} \right\} \begin{array}{l} \div 35 \\ \times 100 \end{array}$$

Answer: £150

[2 marks]



Q5. In a sale, the normal price of a microwave oven is reduced by 22%.
The sale price of the microwave is £67.08.
Work out the normal price of the oven.

$$\square \times 0.78 = 67.08$$

$$\frac{67.08}{0.78} = 86$$

Answer: £86

[2 marks]

Q6. The annual cost of a council tax bill increased by 8%. The council tax bill increased by £58. Work out the cost of the council tax bill before the increase.

$$\begin{array}{l} \div 8 \\ \times 100 \end{array} \left. \begin{array}{l} 8\% = 58 \\ 100\% = 725 \end{array} \right\} \begin{array}{l} \div 8 \\ \times 100 \end{array}$$

Answer: £725

[2 marks]



Q7. The price of a PC workstation decreased by 7.5%. If the price of the workstation decreased by £120, find the original price.

$$\begin{array}{l} \div 7.5 \\ \times 100 \end{array} \left. \begin{array}{l} 7.5\% = 120 \\ 100\% = 1600 \end{array} \right\} \begin{array}{l} \div 7.5 \\ \times 100 \end{array}$$

Answer: £1600

[2 marks]

Q8. One day, George is given a pay rise of 4%. Later that year, he receives another pay rise of 2%. If he now earns £2545.92 per month, work out how much his monthly salary was before the two pay increases.

$$\square \times 1.04 \times 1.02 = 2545.92$$

$$\frac{2545.92}{1.02 \times 1.04} = 2400$$

Answer: £2400

[3 marks]



Q9. At the start of 2019, the value of Jeremy's investment was £28,000. During that year, it decreased in value by 4%. In 2020, it then increased in value by $x\%$. If it was worth £27,283.20 at the end of 2020, find the value of x .

$$28000 \times 0.96 = 26880$$

$$26880 \times \square = 27283.20$$

$$\frac{27283.20}{26880} = 1.015 \quad \left(\begin{array}{l} (1.015 - 1) \times 100 \\ = 1.5 \end{array} \right)$$

Answer: 1.5

[3 marks]

Q10. Jo's tortoise increased in weight by 1% each year since its birth. If it is now 3 years old, and weighs 4 kg, find the birth weight to the nearest gram.

$$\frac{4000}{1.01^3} = 3882$$

Answer: 3882g

[3 marks]



Reverse Percentage, Or Not?

Q11. The population of birds on St. Michael's island is 2200. Scientists state that the population is growing by 10% each year. What will be the population next year, according to the scientists?

(Not reverse)

$$2200 \times 1.1 = 2420$$

Answer: 2420

[2 marks]

Q12. A car cost £8500 when it is bought, and depreciates by 15% over the first year after purchase. How much will it be worth after 1 year?

(Not reverse)

$$8500 \times 0.85 = 7225$$

Answer: £7225

[2 marks]



Q13. John's kitchen measured 11.5 m^2 after he had an extension built. The area had increased by 25% after extending. What area did his kitchen cover before?

(Reverse)

$$\square \times 1.25 = 11.5$$

$$\frac{11.5}{1.25} = 9.2$$

Answer: 9.2m²
[2 marks]

Q14. After half-time, the number of spectators at a rugby match decreases by 9%. There were 45,000 spectators before half-time. How many remain?

(Not reverse)

$$45000 \times 0.91 = 40950$$

Answer: 40950

[2 marks]



Q15. Mae buys a ring which costs £68. This cost includes VAT at a rate of 20%. How much is the watch without VAT, to the nearest penny?

(Reverse)

$$\square \times 1.2 = 68$$

$$\frac{68}{1.2} = 56.67$$

Answer: 56.67
[2 marks]