

REVERSE PERCENTAGES

Task 1 (Non-calculator)

1) 15% of a number is 9. What is the number?

60

2) 25% of a number is 12. What is the number?

48

3) 40% of a number is 36. What is the number?

90

4) 60% of a number is 48. What is the number?

80

5) 5% of a number is 7. What is the number?

140

6) 80% of a number is 56. What is the number?

70

7) 12% of a number is 18. What is the number?

150

8) 70% of a number is 35. What is the number?

50

Task 2 (Non-calculator)

9) A bill has increased by 20% and now costs £72. What was the original cost of the bill?

100% + 20% = 120%

£72 = 120%

£0.60 = 1%

£60 = 100%

£60

10) A bicycle was reduced in price by 25% to £180. What was the original price of the bicycle?

100% - 25% = 75%

£180 = 75%

£2.40 = 1%

£240 = 100%

£240

11) A cinema ticket price increased by 15% to £11.50. What was the original ticket price?

100% + 15% = 115%

£11.50 = 115%

£0.1 = 1%

£10 = 100%

£10

12) After a 10% discount, a shirt cost £27. What was the original price of the shirt?

100% - 10% = 90%

£27 = 90%

£0.3 = 1%

£30 = 100%

£30

13) A school trip fee rose by 20%. The increase was £8. What was the original trip fee?

£8 = 20%

£40 = 100%

£40

14) A laptop was reduced by 30% to £560. What was the original price of the laptop?

100% - 30% = 70%

£560 = 70%

£8 = 1%

£800 = 100%

£800

15) After a 12% increase, a train ticket now costs £33.60. What was the original ticket cost?

100% + 12% = 112%

£33.60 = 112%

£0.3 = 1%

£30 = 100%

£30

16) A mobile phone contract was reduced by 40% to £18 a month. What was the original cost of the phone contract?

$$100\% - 40\% = 60\%$$

$$\text{£18} = 60\%$$

$$\text{£0.3} = 1\%$$

$$\text{£30} = 100\%$$

$$\text{£30}$$

17) A TV went on sale with 15% off and cost £425. What was the original price of the TV?

$$100\% - 15\% = 85\%$$

$$\text{£425} = 85\%$$

$$\text{£5} = 1\%$$

$$\text{£500} = 100\%$$

$$\text{£500}$$

Challenge (Calculator)

23) A TV was reduced by 15% in a summer sale, then reduced by another 10% in a clearance sale. The final price was £459. What was the original price of the TV?

$$\text{£459} \div 0.9 = \text{£510}$$

$$\text{£510} \div 0.85 = \text{£600}$$

$$\text{£600}$$

24) A phone increased in price by 8%, then again by 12%. The final price was £605.76. What was the original price of the phone?

$$\text{£605.76} \div 1.12 = \text{£540.8571...} = \text{ans}$$

$$\text{ans} \div 1.08 = \text{£500.7936...}$$

$$\text{£500.79}$$

25) A jacket was reduced by 25%, then an extra £15 off voucher was applied. The final price was £60. What was the original price?

$$\text{£60} + \text{£15} = \text{£75}$$

$$\text{£75} \div 0.75 = \text{£100}$$

$$\text{£100}$$

26) A laptop increased in price by 30% over 2 years. The first year it increased by 12%. What was the percentage increase in the second year if the original price was £500? Give your answer to two decimal places.

Final price:

$$\text{£500} \times 1.3 = \text{£650}$$

$$\text{£650} \div 1.12 = \text{£580.3571...}$$

$$\text{£500} \times (1 + x) = \text{£580.3571 ...}$$

$$1 + x = 1.1607 ...$$

$$x = 0.1607 ...$$

20) An investment grew by 45% to £2,174. Find the starting value of the investment.

$$\text{£2174} \div 1.45 = \text{£1499.3103...}$$

$$\text{£1499.31}$$

21) After a 63% drop, the value of shares is £814. Find the original value of the shares.

$$\text{£814} \div 0.37 = \text{£2200}$$

$$\text{£2200}$$

$$16.07\% \text{ (2 dp)}$$

22) A club membership rose by 6.5% to £215. Find the original fee of the membership.

$$\text{£215} \div 1.065 = \text{£201.8779...}$$

$$\text{£201.88}$$