

**YEAR 8**

Percentages, Increase and Decrease

Three sections. Section B is about the multiplier, which is the idea that makes section C possible: once you can write a change as one number to multiply by, working backwards is dividing rather than guessing.

Name: _____

Date: _____

Score: _____

A. Percentages of amounts

10% is a tenth, 1% is a hundredth. Build the rest from those.

① Find 15% of 200.

② Find 25% of 80.

③ Find 10% of 350.

④ Find 75% of 64.

⑤ Find 5% of 120.

⑥ Find 20% of 45.

⑦ Find 12.5% of 240.

⑧ Find 30% of 90.

B. Increase and decrease

A 20% rise is a multiplier of 1.2. A 20% fall is 0.8.

9 Increase £400.00 by 20%.

10 Increase £150.00 by 8%.

11 Increase £60.00 by 45%.

12 Decrease £500.00 by 15%.

13 Decrease £80.00 by 35%.

14 Decrease £240.00 by 5%.

15 What single multiplier gives a 17% increase?

16 What single multiplier gives a 23% decrease?

17 What single multiplier gives an 8% increase?

C. Working backwards

If a multiplier took you forwards, dividing by it takes you back. The original amount is always the 100%.

18 A price changes from £50.00 to £65.00. Find the percentage change.

19 A price changes from £80.00 to £60.00. Find the percentage change.

20 A price changes from £200.00 to £250.00. Find the percentage change.

21 A jacket costs £60.00 after a 25% discount. What was the original price?

22 A bill is £90.00 including 20% VAT. Find the bill before VAT.

- 23 A shop raises a price by 10%, then reduces the new price by 10%. Explain why the price does not return to where it started.