

**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.

A. Percentages of amounts

- 1 Find 15% of 200. **30**
- 2 Find 25% of 80. **20**
- 3 Find 10% of 350. **35**
- 4 Find 75% of 64. **48**
- 5 Find 5% of 120. **6**
- 6 Find 20% of 45. **9**
- 7 Find 12.5% of 240. **30**
- 8 Find 30% of 90. **27**

B. Increase and decrease

- 9 Increase £400.00 by 20%. **£480.00**
- 10 Increase £150.00 by 8%. **£162.00**
- 11 Increase £60.00 by 45%. **£87.00**
- 12 Decrease £500.00 by 15%. **£425.00**
- 13 Decrease £80.00 by 35%. **£52.00**
- 14 Decrease £240.00 by 5%. **£228.00**
- 15 What single multiplier gives a 17% increase? **1.17**
- 16 What single multiplier gives a 23% decrease? **0.77**
- 17 What single multiplier gives an 8% increase? **1.08**

C. Working backwards

- 18 A price changes from £50.00 to £65.00. Find the percentage change. **30% increase**
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- 19 A price changes from £80.00 to £60.00. Find the percentage change. **25% decrease**
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- 20 A price changes from £200.00 to £250.00. Find the percentage change. **25% increase**
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- 21 A jacket costs £60.00 after a 25% discount. What was the original price? **£80.00**
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- 22 A bill is £90.00 including 20% VAT. Find the bill before VAT. **£75.00**
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- 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. **The rise is 10% of the original and the fall is 10% of the larger new price, so more is taken off than was put on. The multiplier is $1.1 \times 0.9 = 0.99$, a 1% fall overall.**
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