

Summer Term Maths Year 10

Calculating percentage change

Day
1

Week 6

1 Convert these percentages to decimals.

(a) 20% **0.2** (b) 2% **0.02** (c) 120% **1.2**

(d) 0.5% **0.005** (e) 160% **1.6** (f) 85% **0.85**

2 Write the decimal multiplier you would use to find the increases and decreases.

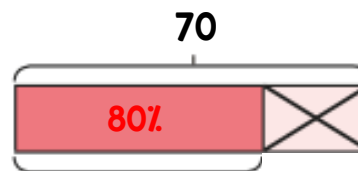
(a) Increase by 5% **1.05** (b) Increase by 90% **1.9**

(c) Decrease by 35% **0.65** (d) Increase by 1.5% **1.015**

(e) Decrease by 12% **0.88** (f) Decrease by 4.5% **0.955**

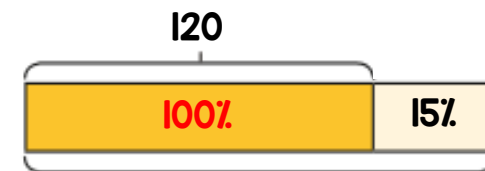
3 Complete each bar model and work out the answers.

Decrease 70 by 20%



$$70 \times 0.8 = \boxed{56}$$

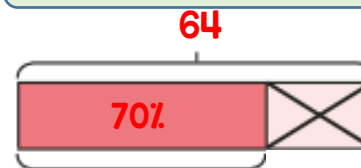
Increase 120 by 15%



$$120 \times 1.15 = \boxed{138}$$

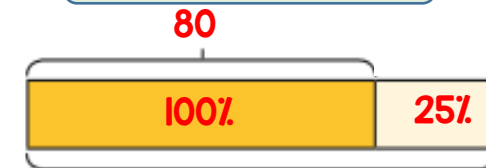
4 Complete these questions by drawing your own bar models.

Decrease 64 by 30%



$$64 \times 0.7 = \boxed{44.8}$$

Increase 80 by 25%



$$80 \times 1.25 = \boxed{100}$$

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5 Tom and Nijah are increasing 60 by 30%.

Tom's method

Nijah's method

$$10\% \text{ of } 60 = 6$$

$$\text{So } 30\% \text{ of } 60 = 3 \times 6 = 18$$

$$\text{So the answer is } 60 + 18 = 78$$

$$100\% + 30\% = 130\%$$

$$130\% \text{ is the same as } 1.3$$

$$\text{So the answer is } 60 \times 1.3 = 78$$

(a) Which method do you prefer? Why?

Various answers

Use Nijah's method to complete the calculations.

- | | |
|---------------------------|--------|
| (b) Increase 50 by 20% | 60 |
| (c) Increase 50 by 75% | 87.5 |
| (d) Decrease 30 by 15% | 25.5 |
| (e) Increase 145 by 7% | 155.15 |
| (f) Decrease 100 by 25% | 75 |
| (g) Decrease 12 by 10.5% | 10.74 |
| (h) Increase 8000 by 8.2% | 8656 |

6 Rosie gets a 15% pay rise at work. She currently earns £110 per day. How much will she earn after the pay rise?

£126.50 per day

7 Mo wants to buy a TV.

Shop A is selling the TV for £350 with 25% off. Shop B is selling the TV for £320 with 20% off. Which shop is selling the TV for a cheaper price?

Shop A (£262.50) is cheaper than shop B (£256)

8 Jack thinks that if he reduces an amount by 20% and then increases the result by 20%, he will get his original amount. E.g. $80 \times 0.8 = 64$, $64 \times 1.2 = 76.8$, $80 \neq 76.8$

Use some calculations to show that Jack is incorrect.