

# GCSE Maths: Percentage increase and decrease (Foundation): answers

GCSE Maths - Percentages - Foundation - Lesson 5.4

**Answers.** Final answers to the worksheet questions. Full step-by-step solutions for every question are free at [websink.site/gcse/maths/ch05-percentages/foundation/percentage-increase-and-decrease/](https://websink.site/gcse/maths/ch05-percentages/foundation/percentage-increase-and-decrease/)

## Exercise 5F Increase and decrease (non-calculator)

Non-calculator

**1** Increase each amount by the percentage shown. Do not use a calculator.

(a) 80 by 10%

**Answer:** 88

(b) £150 by 20%

**Answer:** £180

(c) 240 by 5%

**Answer:** 252

(d) £60 by 25%

**Answer:** £75

(e) 400 by 30%

**Answer:** 520

(f) £35 by 40%

**Answer:** £49

**2** Decrease each amount by the percentage shown. Do not use a calculator.

(a) £80 by 10%

**Answer:** £72

(b) 120 by 25%

**Answer:** 90

(c) £250 by 20%

**Answer:** £200

(d) 64 by 50%

**Answer:** 32

(e) £90 by 30%

**Answer:** £63

(f) 300 by 15%

**Answer:** 255

**3** Work out the sale price of each item. Do not use a calculator.

- (a) A £40 top with 10% off

**Answer:** £36

- (b) A £70 bag with 20% off

**Answer:** £56

- (c) A £30 hat with 50% off

**Answer:** £15

**4** Write down the multiplier for each change.

- (a) an increase of 10%

**Answer:** 1.1

- (b) an increase of 4%

**Answer:** 1.04

- (c) a decrease of 20%

**Answer:** 0.8

- (d) a decrease of 3%

**Answer:** 0.97

- (e) an increase of 35%

**Answer:** 1.35

- (f) a decrease of 45%

**Answer:** 0.55

**5** Each number is a multiplier. Write down the percentage increase or decrease it stands for.

- (a) 1.2

**Answer:** 20% increase

- (b) 1.07

**Answer:** 7% increase

- (c) 0.9

**Answer:** 10% decrease

- (d) 0.65

**Answer:** 35% decrease

- (e) 1.5

**Answer:** 50% increase

- (f) 2

**Answer:** 100% increase

**6** A jacket costs £120. In a sale it is reduced by 30%. Work out the sale price.

**Answer:** £84

**7** A train fare of £48 goes up by 5%. Work out the new fare.

**Answer:** £50.40

**8** A plumber charges £60 plus VAT at 20%. Work out the total cost.

**Answer:** £72

**9** In 2020 a village had 2,400 people. By 2025 the population had increased by 15%. How many people lived in the village in 2025?

**Answer:** 2,760

**10** Mark says, "To increase a price by 8% you multiply it by 0.08." Explain why he is wrong. What should he multiply by?

**Answer:** 1.08

**11** Work out the percentage change in each case.

(a) A price is doubled. What is the percentage increase?

**Answer:** 100% increase

(b) A price is multiplied by 3. What is the percentage increase?

**Answer:** 200% increase

(c) A price is halved. What is the percentage decrease?

**Answer:** 50% decrease

**12** Show that increasing 60 by 50% gives the same answer as decreasing 150 by 40%.

**Answer:** Both give 90

## Exercise 5G Increase and decrease (calculator)

Calculator allowed

**1** Use a multiplier to work out each new amount.

(a) Increase £85 by 8%

**Answer:** £91.80

(b) Decrease £250 by 12%

**Answer:** £220

(c) Increase 640 by 3.5%

**Answer:** 662.4

(d) Decrease 3,400 by 17%

**Answer:** 2,822

(e) Increase 1,850 by 22%

**Answer:** 2,257

- (f) Decrease 280 by 4.5%

**Answer:** 267.4

**2** Work out each new amount. Give your answers to the nearest penny.

- (a) Increase £249.99 by 15%

**Answer:** £287.49

- (b) Decrease £64.50 by 12.5%

**Answer:** £56.44

- (c) Increase £1,875 by 2.9%

**Answer:** £1,929.38

**3** Work out each new amount using a calculator.

- (a) Increase £200 by 10%

**Answer:** £220

- (b) Increase £200 by 5%

**Answer:** £210

- (c) Decrease £120 by 20%

**Answer:** £96

- (d) Decrease £120 by 5%

**Answer:** £114

**4** Increase each amount by the percentage shown. (Remember the multiplier can be more than 2.)

- (a) 40 by 150%

**Answer:** 100

- (b) £80 by 200%

**Answer:** £240

- (c) 25 by 120%

**Answer:** 55

**5** Ola earns £2,150 each month. Her pay is increased by 3%. Work out her new monthly pay.

**Answer:** £2,214.50

**6** A laptop costs £650 before VAT. VAT is 20%. Work out the total cost.

**Answer:** £780

**7** Chloe earns £11.50 an hour. Her pay is increased by 4%. Work out her new hourly pay.

**Answer:** £11.96

**8** A car is worth £14,500 when new. In its first year its value falls by 18%. What is it worth after one year?

**Answer:** £11,890

**9** The population of a city is 125,000. It increases by 2.4%. Work out the new population.

**Answer:** 128,000

**10** A landlord increases the monthly rent of £720 by 6.5%. Work out the new rent.

**Answer:** £766.80

**11** A £50 jumper is reduced by 20%. Liam says, "The sale price is £10, because 20% of 50 is 10." Explain his mistake and work out the correct sale price.

**Answer:** £40

**12** A shop raises all its prices by 10%. Mina says, "So a pair of shoes that cost £60 now costs £66." Is she right? Show your working.

**Answer:** Yes