

# GCSE Maths: One quantity as a percentage of another (Foundation): worksheet

GCSE Maths - Percentages - Foundation - Lesson 5.3

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_

24 questions. Write your answers in the spaces. Answers and step-by-step help are free at [websink.site/gcse/maths/ch05-percentages/foundation/one-quantity-as-a-percentage-of-another/](https://websink.site/gcse/maths/ch05-percentages/foundation/one-quantity-as-a-percentage-of-another/)

## Exercise 5D One quantity as a percentage of another (non-calculator)

Non-calculator

**1** Write the first number as a percentage of the second. Do not use a calculator.

(a) 9 out of 20

Answer: \_\_\_\_\_

(b) 12 out of 50

Answer: \_\_\_\_\_

(c) 18 out of 25

Answer: \_\_\_\_\_

(d) 3 out of 4

Answer: \_\_\_\_\_

(e) 30 out of 200

Answer: \_\_\_\_\_

(f) 7 out of 10

Answer: \_\_\_\_\_

**2** Write each as a percentage.

(a) 1 out of 4

Answer: \_\_\_\_\_

(b) 3 out of 10

Answer: \_\_\_\_\_

(c) 7 out of 20

Answer: \_\_\_\_\_

(d) 1 out of 2

Answer: \_\_\_\_\_

**3** Write the first number as a percentage of the second. You will need to divide.

(a) 21 out of 60

Answer: \_\_\_\_\_

(b) 45 out of 120

Answer: \_\_\_\_\_

(c) 9 out of 40

Answer:

(d) 66 out of 120

Answer:

**4** Change to the same units first, then write the first amount as a percentage of the second.

(a) 30 cm out of 2 m

Answer:

(b) 45 minutes out of 3 hours

Answer:

(c) 60p out of £2.40

Answer:

(d) 250 g out of 2 kg

Answer:

(e) 600 m out of 2.4 km

Answer:

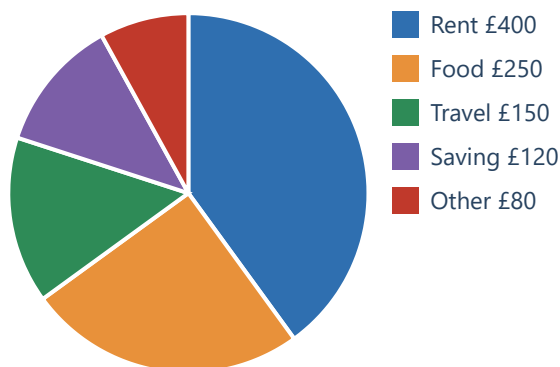
(f) 15 seconds out of 1 minute

Answer:

**5** A bag has 40 counters. 14 of them are red. What percentage of the counters are red?

Answer:

**6** The pie chart shows how Dan spends his £1,000 monthly pay. Work out the percentage he spends on each.



(a) Rent (£400)

Answer:

(b) Food (£250)

Answer:

(c) Travel (£150)

Answer:

(d) Saving (£120)

Answer:

(e) Other (£80)

Answer:

- 7** A netball team played 32 matches and won 24 of them. What percentage did they win?

Answer:

- 8** Rhys scored 36 out of 50 in a maths test and 52 out of 80 in a science test. In which test did he do better? Show your working.

Answer:

- 9** Tom says, "8 out of 20 is 8%, because the top number is 8." Explain his mistake and write 8 out of 20 as a percentage.

Answer:

- 10** At Shop A, 18 out of 24 customers said they were satisfied. At Shop B, 27 out of 36 said they were satisfied. Is one shop better than the other? Give a reason.

Answer:

- 11** The price of a phone rose from £400 to £500. Write the new price as a percentage of the old price.

Answer:

- 12** (a) Write 45 as a percentage of 36. (b) Write 36 as a percentage of 45. (c) Explain why your answers are different.

Answer:

### Exercise 5E One quantity as a percentage of another (calculator)

Calculator allowed

- 1** Write the first number as a percentage of the second. Give your answers to 1 decimal place where necessary.

(a) 17 out of 45

Answer:

(b) 23 out of 36

Answer:

(c) 5 out of 7

Answer:

(d) 129 out of 150

Answer:

(e) 8 out of 13

Answer:

(f) 345 out of 420

Answer:

- 2** In a survey of 240 people, 91 said they prefer cats to dogs. What percentage prefer cats? Give your answer to 1 decimal place.

Answer:

- 3** A bag holds 750 g of flour. A baker uses 285 g. What percentage of the flour does the baker use?

Answer:

- 4** The population of a town rises from 48,500 to 52,310. Write the new population as a percentage of the old population. Give your answer to 1 decimal place.

Answer: .....

- 5** A runner completes 7.5 km of a 12 km charity route. What percentage of the route has the runner completed?

Answer: .....

- 6** Amy scored 68 out of 85 in a quiz. Ben scored 74 out of 95 in a harder quiz. Who got the higher percentage? Show your working.

Answer: .....

- 7** Ella scored 14 goals from 22 shots. Fatima scored 19 goals from 30 shots. Who has the better shooting record? Show your working.

Answer: .....

- 8** Lena scored 134 marks out of 200. The pass mark is 65%. Did Lena pass? Explain.

Answer: .....

- 9** A company has an income of £1.2 million. Its profit is £84,000. Write the profit as a percentage of the income.

Answer: .....

- 10** The table shows how many students passed a test in three classes. Put the classes in order, highest pass rate first.

| Class | Passed | Students |
|-------|--------|----------|
| A     | 13     | 20       |
| B     | 20     | 32       |
| C     | 17     | 25       |

Answer: .....

- 11** Sales last year were £28,000. Sales this year are £35,000. Write this year's sales as a percentage of last year's sales.

Answer: .....

- 12** Chen says, "A percentage of something can never be more than 100%." Is he right? Use an example to explain.

Answer: .....