

Fractions, Decimals and Percentages

GCSE Mathematics • Foundation Tier • Grades 1–3 • Non-calculator

WORKED SOLUTIONS

Name: worked example

Class:

Total: 42 / 42

Show all your working. Marks are given for correct method as well as the final answer.

1. Write 0.7 as a fraction in its simplest form. [2 marks]

$$0.7 = 7 \text{ tenths}$$
$$\frac{7}{10} \text{ already simplest}$$

Answer: $\frac{7}{10}$

2. Write $\frac{3}{4}$ as a decimal. [1 mark]

$$3 \div 4 = 0.75$$

Answer: 0.75

3. Write 45% as a decimal. [1 mark]

$$\div 100$$

move the point 2 places left

Answer: 0.45

4. Write 0.3 as a percentage. [1 mark]

$$\times 100$$

Answer: 30%

5. Write $\frac{2}{5}$ as a percentage. [2 marks]

$$\frac{2}{5} = \frac{40}{100}$$

$\times 20$ top and bottom

Answer: 40%

6. Write 24% as a fraction in its simplest form. [2 marks]

$$\frac{24}{100}$$

$\div 4$ top and bottom

$$= \frac{6}{25}$$

Answer: $\frac{6}{25}$

7. Write these in order, smallest first: 0.6, $\frac{1}{2}$, 65%, $\frac{3}{5}$. [3 marks]

turn them all into decimals

$$0.6 \quad 0.5 \quad 0.65 \quad 0.6$$

0.6 and $\frac{3}{5}$ are equal

$$0.5 < 0.6 < 0.65$$

Answer: $\frac{1}{2}$, 0.6 = $\frac{3}{5}$, 65%

8. Work out $\frac{1}{4} + \frac{2}{5}$. [2 marks]

common denominator 20

$$\frac{5}{20} + \frac{8}{20}$$

add the tops only

Answer: _____ $\frac{13}{20}$ _____

9. Work out $\frac{5}{6} - \frac{1}{3}$. [2 marks]

$$\frac{5}{6} - \frac{2}{6} = \frac{3}{6}$$

simplify: $\frac{1}{2}$

Answer: _____ $\frac{1}{2}$ _____

10. Work out $\frac{2}{3} \times \frac{3}{8}$. [2 marks]

tops: $2 \times 3 = 6$
bottoms: $3 \times 8 = 24$
 $\frac{6}{24} = \frac{1}{4}$

Answer: _____ $\frac{1}{4}$ _____

11. Work out $\frac{3}{4} \div \frac{1}{2}$. [2 marks]

flip the second and multiply
 $\frac{3}{4} \times \frac{2}{1} = \frac{6}{4}$
KEEP, FLIP, CHANGE

Answer: _____ $\frac{3}{2} = 1\frac{1}{2}$ _____

12. Work out $1\frac{1}{2} + \frac{3}{4}$. [3 marks]

$$1\frac{1}{2} = \frac{3}{2} = \frac{6}{4}$$
$$\frac{6}{4} + \frac{3}{4} = \frac{9}{4}$$
$$= 2\frac{1}{4}$$

Answer: _____ $2\frac{1}{4}$ _____

13. Work out $\frac{3}{5}$ of \$45. [2 marks]

$$45 \div 5 = 9$$
$$9 \times 3 = 27$$

Answer: _____ £27 _____

14. Work out 10% of 320. [1 mark]

$$\div 10$$

Answer: _____ 32 _____

15. Work out 15% of 240 without a calculator. [2 marks]

$$10\% = 24$$
$$5\% = 12$$
$$24 + 12 = 36$$

build it from 10% and 5%

Answer: _____ 36 _____

16. Work out 35% of \$80. [2 marks]

$$10\% = 8 \rightarrow 30\% = 24$$
$$5\% = 4$$
$$24 + 4 = 28$$

Answer: _____ £28 _____

17. Write 18 out of 40 as a percentage.

[2 marks]

$$\frac{18}{40} \times 100 = 45$$

Answer: _____ 45% _____

18. In a test Amina scored $\frac{17}{25}$ and Ben scored 65%. Who did better? Show your working. [3 marks]

can't compare a fraction with a %

$$\frac{17}{25} = \frac{68}{100} = 68\%$$
$$68 > 65$$

Answer: _ Amina (68% vs 65%) _

19. A coat costs \$60. In a sale it is reduced by 25%. Work out the sale price.

[3 marks]

$$25\% \text{ of } 60 = 15$$
$$60 - 15 = 45$$

or find 75% straight off

Answer: _____ £45 _____

20. A recipe uses $\frac{2}{3}$ of a 900 g bag of flour.

(a) How many grams are used?

[2 marks]

$$900 \div 3 = 300$$
$$300 \times 2 = 600 \text{ g}$$

(b) What percentage of the bag is left?

[2 marks]

300 g left out of 900 g

$$\frac{300}{900} = \frac{1}{3}$$
$$= 33.3\% (1 \text{ d.p.})$$

Answer: _____ 600 g ; 33.3% _____