

GCSE Maths: Equivalent fractions and simplifying (Foundation): answers

GCSE Maths - Fractions - Foundation - Lesson 3.2

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/gcse/maths/ch03-fractions/foundation/equivalent-fractions-and-simplifying/

Exercise 3B Equivalent fractions and simplifying Non-calculator

1 Find the missing numbers.

(a) $\frac{1}{2} = \frac{?}{6}$

Answer: 3

(b) $\frac{1}{3} = \frac{?}{12}$

Answer: 4

(c) $\frac{2}{5} = \frac{?}{15}$

Answer: 6

(d) $\frac{3}{4} = \frac{?}{20}$

Answer: 15

(e) $\frac{7}{8} = \frac{21}{?}$

Answer: 24

(f) $\frac{4}{9} = \frac{20}{?}$

Answer: 45

(g) $\frac{5}{6} = \frac{20}{?}$

Answer: 24

(h) $\frac{2}{7} = \frac{12}{?}$

Answer: 42

2 Write three fractions that are equivalent to $\frac{1}{4}$.

Answer: For example $\frac{2}{8}$, $\frac{3}{12}$, $\frac{4}{16}$

3 Write each fraction in its simplest form.

(a) $\frac{4}{8}$

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

(b) $\frac{6}{9}$

Answer: $\frac{2}{3}$

(c) $\frac{10}{15}$

Answer: $\frac{2}{3}$

(d) $\frac{12}{16}$

Answer: $\frac{3}{4}$

(e) $\frac{18}{24}$

Answer: $\frac{3}{4}$

(f) $\frac{20}{50}$

Answer: $\frac{2}{5}$

(g) $\frac{28}{42}$

Answer: $\frac{2}{3}$

(h) $\frac{36}{60}$

Answer: $\frac{3}{5}$

(i) $\frac{45}{75}$

Answer: $\frac{3}{5}$

(j) $\frac{63}{81}$

Answer: $\frac{7}{9}$

4 Which of these fractions are equal to $\frac{2}{3}$? $\frac{4}{6}$ $\frac{6}{10}$ $\frac{10}{15}$ $\frac{8}{12}$ $\frac{12}{20}$

Answer: $\frac{4}{6}$, $\frac{10}{15}$, $\frac{8}{12}$

5 Write each as a fraction in its simplest form.

(a) 15 minutes out of 60 minutes

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

- (b) 40 cm out of 1 m (100 cm)

Answer: $\frac{2}{5}$

- (c) 250 g out of 1 kg (1000 g)

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

- (d) 45 seconds out of 1 minute

Answer: $\frac{3}{4}$

- (e) 8 months out of 1 year

Answer: $\frac{2}{3}$

- (f) 36p out of £2.40

Answer: $\frac{3}{20}$

- 6 In a class of 30 pupils, 18 are girls. What fraction of the class are girls? Give your answer in its simplest form.

Answer: $\frac{3}{5}$

- 7 Tom says " $\frac{3}{7} = \frac{6}{10}$ because you add 3 to the top and 3 to the bottom." Explain why Tom is wrong.

Answer: Equivalent fractions come from multiplying (or dividing) top and bottom by the same number, not adding. $\frac{3}{7} \times 2 = \frac{6}{14}$.

- 8 A fraction is equivalent to $\frac{2}{3}$. The numerator and denominator add up to 35. Find the fraction.

Answer: $\frac{14}{21}$ (multiplier 7 since $2k + 3k = 35$)

- 9 Is $\frac{17}{51}$ in its simplest form? Explain.

Answer: No. 17 is a factor of both 17 and 51, so $\frac{17}{51} = \frac{1}{3}$

- 10 **Challenge.** Write $\frac{84}{126}$ in its simplest form. Show that you found the HCF first.

Answer: HCF of 84 and 126 is 42. $84 \div 42 = 2$, $126 \div 42 = 3$. Answer $\frac{2}{3}$