

## UNIT 4    *Fractions and Percentages*    Extra Exercises 4.1

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1. For each of the following statements, complete the fraction with the missing number:

(a)  $\frac{4}{5} = \frac{\square}{40}$

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

(c)  $\frac{3}{7} = \frac{12}{\square}$

(d)  $\frac{88}{100} = \frac{\square}{25}$

(e)  $\frac{28}{64} = \frac{\square}{16}$

(f)  $\frac{11}{44} = \frac{1}{\square}$

2. Write each of the following fractions in its simplest form:

(a)  $\frac{9}{30}$

(b)  $\frac{11}{55}$

(c)  $\frac{44}{99}$

(d)  $\frac{21}{28}$

(e)  $\frac{56}{64}$

(f)  $\frac{25}{30}$

(g)  $\frac{15}{45}$

(h)  $\frac{24}{32}$

(i)  $\frac{84}{100}$

3. (a) For each of the following statements, complete the fraction with the missing number:

$$\frac{3}{5} = \frac{\square}{35} \quad \text{and} \quad \frac{4}{7} = \frac{\square}{35}$$

- (b) Which fraction is *larger*,  $\frac{3}{5}$  or  $\frac{4}{7}$ ?

4. Write the following fractions in order of size, with the smallest first:

$$\frac{1}{2}, \frac{3}{4}, \frac{5}{6}, \frac{3}{8}, \frac{7}{12}$$

**UNIT 4**    *Fractions and Percentages*    **Extra Exercises 4.2**

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1. Calculate:

(a)  $\frac{1}{2}$  of 88

(b)  $\frac{1}{3}$  of 39

(c)  $\frac{1}{4}$  of 500

(d)  $\frac{1}{7}$  of 42

(e)  $\frac{1}{9}$  of 54

(f)  $\frac{1}{8}$  of 1000

(g)  $\frac{2}{3}$  of 90

(h)  $\frac{2}{7}$  of 210

(i)  $\frac{3}{5}$  of 145

(j)  $\frac{4}{5}$  of 80

(k)  $\frac{7}{11}$  of 2200

(l)  $\frac{5}{8}$  of 3000

2. A crate holds 120 eggs. In transit,  $\frac{1}{10}$  of the eggs are cracked.

(a) How many eggs are cracked?

(b) How many eggs are *not* cracked?

3. A footballer expects to score 1 goal in  $\frac{2}{3}$  of the matches he plays. How many goals would he expect to score in:

(a) 12 matches,

(b) 30 matches,

(c) 141 matches ?

4. Nazim has to drive 320 miles. He decides to stop when he has completed  $\frac{3}{5}$  of the journey. How far will he travel before he stops?

5. A small company decides to give  $\frac{2}{15}$  of its profits to a charity. How much would it give away if it made a profit of £66 000 ?

## UNIT 4    *Fractions and Percentages*    **Extra Exercises 4.3**

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1. Calculate:

(a)  $\frac{3}{11} + \frac{4}{11}$

(b)  $\frac{3}{10} + \frac{5}{10}$

(c)  $\frac{4}{9} - \frac{1}{9}$

(d)  $\frac{3}{5} + \frac{2}{7}$

(e)  $\frac{4}{9} + \frac{3}{4}$

(f)  $\frac{5}{7} + \frac{2}{3}$

(g)  $\frac{3}{11} + \frac{1}{4}$

(h)  $\frac{5}{8} - \frac{2}{5}$

(i)  $\frac{1}{2} - \frac{2}{9}$

2. Calculate:

(a)  $\frac{1}{2} \times \frac{3}{4}$

(b)  $\frac{5}{8} \times \frac{2}{3}$

(c)  $\frac{3}{5} \times \frac{2}{9}$

(d)  $\frac{6}{7} \times \frac{14}{15}$

(e)  $\frac{11}{12} \times \frac{6}{7}$

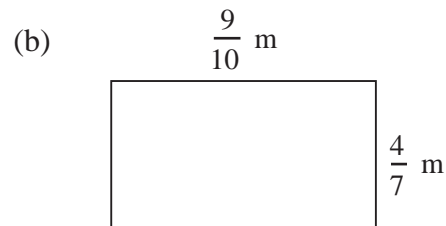
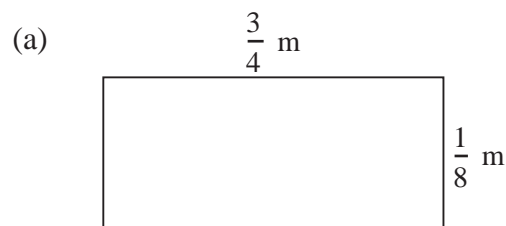
(f)  $\frac{3}{8} \div \frac{2}{3}$

(g)  $\frac{4}{5} \div \frac{1}{2}$

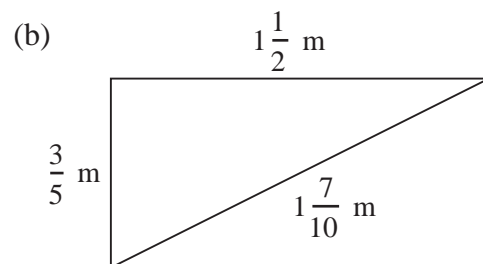
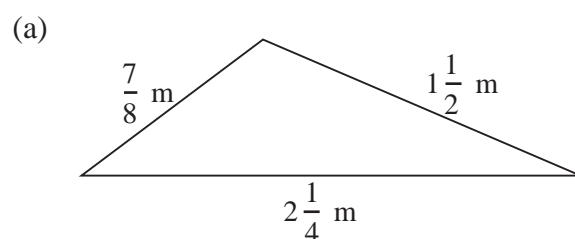
(h)  $1\frac{1}{2} \times \frac{3}{4}$

(i)  $4\frac{1}{5} \times 1\frac{1}{2}$

3. Calculate the area and perimeter of each of the following rectangles:



4. Calculate the perimeter of each of the following triangles:



## UNIT 4    *Fractions and Percentages*    Extra Exercises 4.4

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- Write each of the following percentages as fractions in their simplest form:
  - 75%
  - 10%
  - 95%
  - 34%
  - 80%
  - 4%
  
- Write each of the following decimals as a percentage and as a fraction in its simplest form:
  - 0.18
  - 0.95
  - 0.37
  - 0.08
  - 0.11
  - 0.74
  
- Write each of the following fractions as a decimal and as a percentage:
  - $\frac{3}{20}$
  - $\frac{11}{25}$
  - $\frac{7}{10}$
  - $\frac{1}{4}$
  - $\frac{3}{25}$
  - $\frac{5}{40}$
  
- In a class of 25 pupils, 8 cannot swim.
  - What percentage of the class *can* swim?
  - What percentage of the class *cannot* swim?
  
- At a factory, 30 of the 1000 workers voted to go on strike. What percentage was this?

## UNIT 4    *Fractions and Percentages*    **Extra Exercises 4.5**

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1.    (a)    *Increase* £200 by 50%.  
      (b)    *Increase* £450 by 20%.  
      (c)    *Increase* £80 by 30%.  
      (d)    *Increase* £40 by 5%.  
      (e)    *Decrease* £20 by 10%.  
      (f)    *Decrease* £90 by 5%.  
      (g)    *Decrease* £120 by 11%.
  
2.    In a sale, all the prices in a shop are reduced by 30%. Calculate the sale price of each of the following items:
  - (a)    a bike that cost £250,
  - (b)    a helmet that cost £30,
  - (c)    a pump that cost £5,
  - (d)    a pair of gloves that cost £3.20.
  
3.    Anna earns £210 per week. She is given a 3% pay rise. How much does she now earn per week?
  
4.    A keyboard originally cost £240. Its price was increased by 8%. Calculate the new price of the keyboard.
  
5.    Ben puts £200 in a building society. Every year 6% interest is added to his money. How much does he have after:
  - (a)    1 year,
  - (b)    2 years ?

## Extra Exercises 4.1 Answers

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1. (a)  $\frac{32}{40}$  (b)  $\frac{4}{12}$  (c)  $\frac{12}{28}$   
 (d)  $\frac{22}{25}$  (e)  $\frac{7}{16}$  (f)  $\frac{1}{4}$
2. (a)  $\frac{3}{10}$  (b)  $\frac{1}{5}$  (c)  $\frac{4}{9}$   
 (d)  $\frac{3}{4}$  (e)  $\frac{7}{8}$  (f)  $\frac{5}{6}$   
 (g)  $\frac{1}{3}$  (h)  $\frac{3}{4}$  (i)  $\frac{21}{25}$
3. (a)  $\frac{21}{35}, \frac{20}{35}$  (b)  $\frac{3}{5}$
4.  $\frac{3}{8}, \frac{1}{2}, \frac{7}{12}, \frac{3}{4}, \frac{5}{6}$

## Extra Exercises 4.2 Answers

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1. (a) 44 (b) 13 (c) 125  
 (d) 6 (e) 6 (f) 125  
 (g) 60 (h) 60 (i) 87  
 (j) 64 (k) 1400 (l) 1875
2. (a) 12 (b) 108
3. (a) 8 (b) 20 (c) 94
4. 192 miles
5. £8 800

## Extra Exercises 4.3 Answers

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1. (a)  $\frac{7}{11}$  (b)  $\frac{8}{10} = \frac{4}{5}$  (c)  $\frac{3}{9} = \frac{1}{3}$   
 (d)  $\frac{31}{35}$  (e)  $\frac{43}{36} = 1\frac{7}{36}$  (f)  $\frac{29}{21} = 1\frac{8}{21}$   
 (g)  $\frac{23}{44}$  (h)  $\frac{9}{40}$  (i)  $\frac{5}{18}$
2. (a)  $\frac{3}{8}$  (b)  $\frac{5}{12}$  (c)  $\frac{2}{15}$   
 (d)  $\frac{4}{5}$  (e)  $\frac{11}{14}$  (f)  $\frac{9}{16}$   
 (g)  $\frac{8}{5} = 1\frac{3}{5}$  (h)  $\frac{9}{8} = 1\frac{1}{8}$  (i)  $\frac{63}{10} = 6\frac{3}{10}$
3. (a)  $\frac{3}{32} \text{ m}^2, 1\frac{3}{4} \text{ m}$  (b)  $\frac{18}{35} \text{ m}^2, \frac{103}{35} = 2\frac{33}{35} \text{ m}$
4. (a)  $4\frac{5}{8} \text{ m}$  (b)  $3\frac{4}{5} \text{ m}$

## Extra Exercises 4.4 Answers

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1. (a)  $\frac{3}{4}$  (b)  $\frac{1}{10}$  (c)  $\frac{19}{20}$   
(d)  $\frac{17}{50}$  (e)  $\frac{4}{5}$  (f)  $\frac{1}{25}$
2. (a) 18%,  $\frac{9}{50}$  (b) 95%,  $\frac{19}{20}$  (c) 37%,  $\frac{37}{100}$   
(d) 8%,  $\frac{2}{25}$  (e) 11%,  $\frac{11}{100}$  (f) 74%,  $\frac{37}{50}$
3. (a) 0.15, 15% (b) 0.44, 44% (c) 0.7, 70%  
(d) 0.25, 25% (e) 0.12, 12% (f) 0.125, 12.5%
4. (a) 68% (b) 32%
5. 3%

## Extra Exercises 4.5 Answers

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1. (a) £300 (b) £540 (c) £104 (d) £42  
(e) £18 (f) £85.50 (g) £106.80
2. (a) £175 (b) £21 (c) £3.50 (d) £2.24
3. (a) £216.30
4. (a) £259.20
5. (a) £212.00 (b) £224.72