# UNIT 9 *Fractions and Percentages* Extra Exercises 9.1

1. Calculate:

(a) $\frac{3}{8}+\frac{7}{8}$ (b) $\frac{4}{7}+\frac{1}{7}$ (c) $\frac{3}{5}-\frac{2}{5}$

(d) $\frac{4}{5}+\frac{1}{2}$ (e) $\frac{3}{4}+\frac{2}{7}$ (f) $\frac{5}{8}-\frac{1}{3}$

(g) $\frac{3}{4}+\frac{7}{8}$ (h) $\frac{3}{5}-\frac{1}{4}$ (i) $\frac{4}{9}+\frac{2}{3}$

2. Calculate:

(a) $\frac{3}{4}\times\frac{1}{2}$ (b) $\frac{5}{8}\times\frac{2}{3}$ (c) $\frac{4}{5}\times\frac{2}{3}$

(d) $\frac{3}{7}\times\frac{2}{5}$ (e) $\frac{4}{5}\times\frac{3}{4}$ (f) $\frac{3}{4}\times\frac{7}{9}$

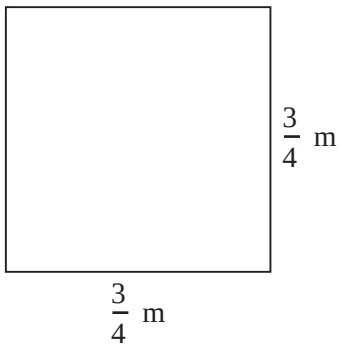
3. Calculate:

(a) $\frac{1}{2}\div\frac{1}{4}$ (b) $\frac{3}{4}\div\frac{3}{8}$ (c) $\frac{5}{7}\div\frac{2}{5}$

(d) $\frac{3}{5}\div\frac{1}{3}$ (e) $\frac{4}{9}\div\frac{2}{3}$ (f) $\frac{6}{7}\div\frac{3}{4}$

# UNIT 9 *Fractions and Percentages* Extra Exercises 9.2

1. Calculate the area and perimeter of this square:

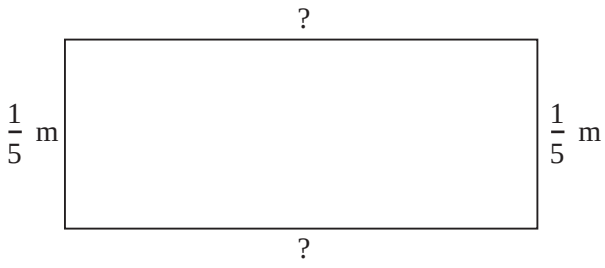



2. A school has 1200 pupils. If $\frac{3}{4}$ of the pupils travel to school by bus, how many of the pupils:
   (a) travel to school by bus,
   (b) do *not* travel to school by bus?

3. In a class of 32 children, $\frac{3}{8}$ of the children are boys. How many girls are there in the class?

4. In a car park there are 120 cars. A traffic warden puts parking-fine tickets on $\frac{1}{20}$ of the cars. How many parking-fine tickets does the traffic warden use?

5. (a) If the perimeter of this rectangle is $1\frac{1}{2}$ m, calculate the length of the unknown sides:




   (b) What is the area of the rectangle?

# UNIT 9 *Fractions and Percentages* Extra Exercises 9.3

1. Convert the following fractions to percentages:

   (a) $\frac{1}{4}$ (b) $\frac{9}{10}$ (c) $\frac{4}{5}$

   (d) $\frac{7}{50}$ (e) $\frac{17}{20}$ (f) $\frac{19}{25}$

2. Convert the following percentages to fractions in their simplest form:

   (a) 20% (b) 75% (c) 30%

   (d) 32% (e) 48% (f) 92%

3. In a class of 30 pupils, 10 decide to play in a tennis tournament. What percentage of the class:

   (a) play in the tournament,

   (b) do *not* play in the tournament?

4. Hester has to complete 32 maths questions for her homework. She has done 24. What percentage of the work has she completed?

# UNIT 9 *Fractions and Percentages* Extra Exercises 9.4

1. Calculate:

   (a) 40% of 200 (b) 5% of 150 (c) 6% of 20

   (d) 3% of 50 (e) 90% of 800 (f) 25% of 84

   (g) 60% of 30 (h) 85% of 20 (i) 15% of 30

2. VAT at $17\frac{1}{2}$% is to be added to the prices shown below. How much VAT must be added to each price?

   (a) £10 (b) £200 (c) £52

3. The price of a computer is to be reduced by 20%. If the computer costs £800 before the reduction, how much will be taken off this price?

4. In a club there are 120 members. At a meeting, 70% of them vote. How many people vote?

5. In a school with 800 pupils, 15% of them go on a school trip. How many pupils go on the school trip?

# UNIT 9 *Fractions and Percentages* Extra Exercises 9.5

1. Add 20% to each of the following prices:
   (a) £50 (b) £74 (c) £33.60

2. Reduce each of the following prices by 30%:
   (a) £150 (b) £35 (c) £42.50

3. (a) Increase £60 by 10%. (b) Decrease £90 by 5%.
   (c) Increase £450 by 2%. (d) Decrease £180 by 10%.
   (e) Increase 70 kg by 25%. (f) Decrease 40 m by 7%.
   (g) Increase £18 by 4%. (h) Decrease 750 by 20%.

4. A tennis racket costs £45. In a sale its price is reduced by 30%. What is the sale price?

5. VAT at $17\frac{1}{2}$% must be added to the price of a cooker. If the basic price is £800, what is the price including VAT?

# UNIT 9 *Fractions and Percentages* Extra Exercises 9.6

1. The price of a packet of crisps is increased to 28p from 25p. What is the percentage increase?

2. In a sale, the price of a coat is reduced from £90 to £75.60. Calculate the percentage decrease.

3. A rope shrinks from a length of 20 m to 19.5 m. Calculate the percentage reduction in the length of the rope.

4. Zoë earns £20 per week for a paper round. After a pay rise she earns £21.20 per week. Calculate the percentage increase in her pay.

5. The price for admission to a cinema increases from £4.50 to £5.04. Calculate the percentage increase in the price.

6. The height of a plant increases from 46 cm to 57.5 cm. Calculate the percentage increase in height.

# UNIT 9 *Fractions and Percentages* Extra Exercises 9.7

1. Mr Patel's annual salary is increased by 3% to £22 145. What was his original salary?

2. The price of a TV, including $17\frac{1}{2}$% VAT, is £277.30. What is the basic cost of the TV without VAT?

3. A tent is sold for £120.70 after having been reduced by 15%. How much did the tent cost before the reduction?

4. The height of a plant increases by 4% to 83.2 cm. What was the original height of the plant?

5. The price of a freezer is increased by 5%. In a sale, the price is then reduced by 30% to £345.45. What was the original price of the freezer?

# Extra Exercises 9.1 Answers

1. (a) $\frac{10}{8} = 1\frac{1}{4}$ (b) $\frac{5}{7}$ (c) $\frac{1}{5}$
   (d) $\frac{13}{10} = 1\frac{3}{10}$ (e) $\frac{29}{28} = 1\frac{1}{28}$ (f) $\frac{7}{24}$
   (g) $\frac{13}{8} = 1\frac{5}{8}$ (h) $\frac{7}{20}$ (i) $\frac{10}{9} = 1\frac{1}{9}$
2. (a) $\frac{3}{8}$ (b) $\frac{5}{12}$ (c) $\frac{8}{15}$
   (d) $\frac{6}{35}$ (e) $\frac{3}{5}$ (f) $\frac{7}{12}$
3. (a) 2 (b) 2 (c) $\frac{25}{14} = 1\frac{11}{14}$
   (d) $\frac{9}{5} = 1\frac{4}{5}$ (e) $\frac{2}{3}$ (f) $\frac{8}{7} = 1\frac{1}{7}$

# Extra Exercises 9.2 Answers

1. (a) Perimeter $= 3$ m Area $= \frac{9}{16}$ m$^2$
2. (a) 900 (b) 300
3. 20
4. 6
5. (a) $\frac{11}{20}$ m (b) $\frac{11}{100}$ m$^2$

# Extra Exercises 9.3 Answers

1. (a) 25% (b) 90% (c) 80%
   (d) 14% (e) 85% (f) 76%
2. (a) $\frac{1}{5}$ (b) $\frac{3}{4}$ (c) $\frac{3}{10}$
   (d) $\frac{8}{25}$ (e) $\frac{12}{25}$ (f) $\frac{23}{25}$
3. (a) $33\frac{1}{3}\%$ (b) $66\frac{2}{3}\%$
4. 75%

## Extra Exercises 9.4 Answers

1. (a) 80 (b) 7.5 (c) 1.2
   (d) 1.5 (e) 720 (f) 21
   (g) 18 (h) 17 (i) 4.5
2. (a) £1.75 (b) £35 (c) £9.10
3. £160
4. 84
5. 120

## Extra Exercises 9.5 Answers

1. (a) £60 (b) £88.80 (c) £40.32
2. (a) £105 (b) £24.50 (c) £29.75
3. (a) £66 (b) £85.50 (c) £459 (d) £162
   (e) 87.5 kg (f) 37.2 m (g) £18.72 (h) 600
4. £31.50
5. £940

## Extra Exercises 9.6 Answers

1. 12%
2. 16%
3. 2.5%
4. 6%
5. 12%
6. 25%

## Extra Exercises 9.7 Answers

1. £21 500
2. £236
3. £142
4. 80 cm
5. £470