

**UNIT 9**     *Fractions and Percentages*     **Extra Exercises 9.1**

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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)  $\frac{3}{5} \div \frac{1}{3}$

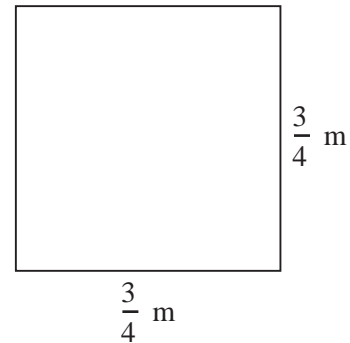
(e)  $\frac{4}{9} \div \frac{2}{3}$

(f)  $\frac{6}{7} \div \frac{3}{4}$

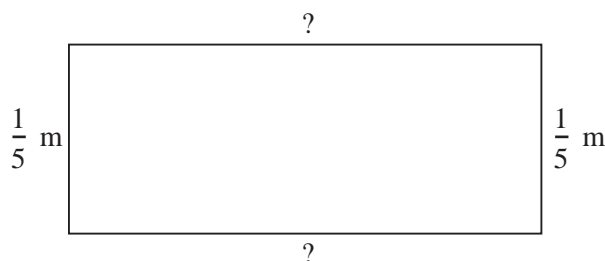
## UNIT 9 *Fractions and Percentages*

## 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:
- travel to school by bus,
  - 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**

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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**

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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**

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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**

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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**

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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

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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

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

## Extra Exercises 9.3 Answers

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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

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|----|-----------|---------|-----------|
| 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

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|----|-------------|------------|------------|----------|
| 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

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- 12%
- 16%
- 2.5%
- 6%
- 12%
- 25%

## Extra Exercises 9.7 Answers

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- £21 500
  - £236
  - £142
  - 80 cm
  - £470
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