

**UNIT 7**     *Ratio and Proportion***Extra Exercises 7.1**

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1. Write each of these ratios in its simplest form:  
(a) 3 : 12                      (b) 4 : 30                      (c) 7 : 21  
(d) 9 : 21                      (e) 8 : 64                      (f) 12 : 15  
(g) 6 : 22                      (h) 11 : 99                      (i) 15 : 27
  
2. Write in the form  $1 : n$ , each of the following ratios:  
(a) 2 : 5                      (b) 8 : 40                      (c) 5 : 7  
(d) 5 : 2                      (e) 10 : 37                      (f) 20 : 50
  
3. In a class there are 18 girls and 12 boys. Write the ratio of boys to girls:  
(a) in its simplest form,  
(b) in the form  $1 : n$ .
  
4. In a drink,  $80 \text{ cm}^3$  of pineapple juice is mixed with  $20 \text{ cm}^3$  of orange juice. Write the ratio of pineapple juice to orange juice:  
(a) in its simplest form,  
(b) in the form  $1 : n$ .

**UNIT 7**     *Ratio and Proportion***Extra Exercises 7.2**

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1. If 10 m of chain costs £6, calculate the cost of:
  - (a) 1 m,
  - (b) 7 m,
  - (c) 22 m.
  
2. If the mass of 20 wooden blocks is 3000 grams, calculate the mass of 16 wooden blocks.
  
3. To make 8 glasses of squash, you need 1280 cm<sup>3</sup> of water. How much water would you need to make:
  - (a) 4 glasses of squash,
  - (b) 1 glass of squash,
  - (c) 7 glasses of squash?
  
4. A car uses 22 litres of petrol to travel 176 miles. How far would the car travel using:
  - (a) 10 litres of petrol,
  - (b) 35 litres of petrol?
  
5. Four identical minibuses carry a total of 64 passengers. How many passengers can be carried in 6 of these minibuses?

**UNIT 7**     *Ratio and Proportion***Extra Exercises 7.3**

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1. Divide £60 in the ratio 2 : 3.
2. Divide £170 in the ratio 9 : 8.
3. Divide 240 kg in the ratio 1 : 2 : 5.
4. Divide 320 kg in the ratio 1 : 5 : 10.
5. John and Steve have earned £150 by doing extra work. They divide the money in the ratio 2 : 3. How much do they each receive?
6. Red, blue and yellow paint are mixed in the ratio 4 : 7 : 3 to produce 308 cm<sup>3</sup> of another colour. How much of each colour paint is used?

**UNIT 7**     *Ratio and Proportion***Extra Exercises 7.4**

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1. If 1 pound sterling (£) is worth 300 Portuguese Escudos (Esc), convert:
  - (a) £5 to Esc,
  - (b) £7 to Esc,
  - (c) 3600 Esc to £,
  - (d) 1740 Esc to £.
  
2. If one pound sterling (£) is worth 60 Belgian Francs (BFr), convert:
  - (a) £45 to BFr,
  - (b) £8.60 to BFr,
  - (c) 1140 BFr to £,
  - (d) 495 BFr to £.
  
3. If there are 4.55 litres in one gallon, convert:
  - (a) 20 gallons to litres,
  - (b) 42 gallons to litres,
  - (c) 37 gallons to litres,
  - (d) 45.5 litres to gallons,
  - (e) 182 litres to gallons,
  - (f) 236.6 litres to gallons.

**UNIT 7**     *Ratio and Proportion***Extra Exercises 7.5**

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1. If Ernie drives at 60 mph, how long will it take him to travel:
  - (a) 240 miles,
  - (b) 75 miles,
  - (c) 165 miles,
  - (d) 140 miles?
  
2. Jane has to drive 60 miles to visit her parents. How long will the journey take if she drives at:
  - (a) 40 mph,
  - (b) 50 mph,
  - (c) 60 mph?
  
3. Amy has to drive 350 miles. How much time does she save if she drives at 70 mph rather than at 50 mph?
  
4. One person can address 50 envelopes in 1 hour. How long will it take:
  - (a) 3 people to address 300 envelopes,
  - (b) 2 people to address 500 envelopes,
  - (c) 5 people to address 1000 envelopes?

## Extra Exercises 7.1 Answers

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1.    (a)    1 : 4            (b)    2 : 15            (c)    1 : 3  
      (d)    3 : 7            (e)    1 : 8            (f)    4 : 5  
      (g)    3 : 11          (h)    1 : 9            (i)    5 : 9
2.    (a)    1 : 2:5          (b)    1 : 5            (c)    1 : 1.4 (2 s.f.)  
      (d)    1 : 0.4          (e)    1 : 3.7          (f)    1 : 2.5
3.    (a)    2 : 3            (b)    1 : 1.5
4.    (a)    4 : 1            (b)    1 : 0.25

## Extra Exercises 7.2 Answers

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1.    (a)    60p            (b)    £4.20            (c)    £13.20
2.    2400 grams
3.    (a)    640 cm<sup>3</sup>          (b)    160 cm<sup>3</sup>          (c)    1120 cm<sup>3</sup>
4.    (a)    80 miles          (b)    280 miles
5.    96 passengers

## Extra Exercises 7.3 Answers

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1.    £24, £36
2.    £90, £80
3.    30 kg, 60 kg, 150 kg
4.    20 kg, 100 kg, 200 kg
5.    £60, £90
6.    88 cm<sup>3</sup>, 154 cm<sup>3</sup>, 66 cm<sup>3</sup>

## Extra Exercises 7.4 Answers

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|----|-----|------------|-----|--------------|-----|---------------|-----|-------|
| 1. | (a) | 1500 Esc   | (b) | 2100 Esc     | (c) | £12           | (d) | £5.80 |
| 2. | (a) | 2700 BFr   | (b) | 516 BFr      | (c) | £19           | (d) | £8.25 |
| 3. | (a) | 91 litres  | (b) | 191.1 litres | (c) | 168.35 litres |     |       |
|    | (d) | 10 gallons | (e) | 40 gallons   | (f) | 52 gallons    |     |       |

## Extra Exercises 7.5 Answers

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|----|-----|--|-----|--|-----|---------|
| 1. | (a) | 4 hours                                | (b) | $1\frac{1}{4}$ hours (1 hour 15 mins)  |     |         |
|    | (c) | $2\frac{3}{4}$ hours (2 hours 45 mins) | (d) | $2\frac{1}{3}$ hours (2 hours 20 mins) |     |         |
| 2. | (a) | $1\frac{1}{2}$ hours (1 hour 30 mins)  | (b) | $1\frac{1}{5}$ hours (1 hour 12 mins)  | (c) | 1 hour  |
| 3. |     | 2 hours                                |     |  |     |         |
| 4. | (a) | 2 hours                                | (b) | 5 hours                                | (c) | 4 hours |