

Text A4 *Ratio and Proportion*

Answers

A4.1 Simple Ratios

1. (a) 2 : 1 (b) 4 : 1 (c) 1 : 2 (d) 3 : 4
 (e) 1 : 6 (f) 4 : 21 (g) 1 : 6 (h) 1 : 3
 (i) 2 : 25 (j) 1 : 8 (k) 4 : 5 (l) 7 : 5
 (m) 27 : 16 (n) 8 : 25 (o) 50 : 49 (p) 4 : 1
 (q) 3 : 1 (r) 2 : 7
2. (a) 15 : 16 (b) 16 : 15
3. (a) 10 : 7 (b) 7 : 10
4. (a) 1 : 3 and 1 : 2 (b) Company A
5. (a) 5 : 9 (b) 11 : 18
6. (a) 3 : 2 (b) 1 : 4
7. 3 : 17
8. (a) 9 : 11 (b) 3 : 7 (c) 10 : 9
9. (a) 800 cm³ (b) 160 cm³ (c) 40 cm³
10. 240
11. 24 + 2 = 26
12. 80
13. 135

A4.2 Proportion and Ratio

1. 12 cm
2. (a) 125 gms (b) 160 gms
3. (a) 161 (b) 48
4. (a) 45 p (b) £6.75 (c) £9.90
5. (a) £9.10 (b) £26.00 (c) £2.60
6. (a) £2.85 (b) £6.84 (c) 40 p
7. (a) 500 gms (b) 13
8. (a) \$23.60 (b) about 16.95 litres
9. (a) 4, 2, 1 (b) $5, \frac{5}{2}, \frac{5}{4}$ (c) $\frac{3}{2}, \frac{3}{4}, \frac{3}{8}$ (teaspoonsful)
10. (a) 5 days (b) 5 days (c) 3 men (2.5)
11. (a) 20 teachers (b) 616 teachers
12. (a) $2\frac{1}{2}$ hours (b) 300 boxes
13. (a) 9 hours (b) 20mins (c) 4

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A4.2

14. Employ 7 people and it takes 2 days
15. 4 euros 25 cents
16. 3, 6, 6, $7\frac{1}{2}$
17. (a) 9 litres (b) (i) 160 g (c) (ii) 150
18. 4.5 cm
19. (a) 6 kg (b) 64 p
20. Small, as the unit cost = 3.24 p (< 3.50 p for large)

A4.3 Map Scales and Ratios (*measurements of some distances may vary according to print size*)

1. (a) 13.5 km (b) 30 km (c) 16.5 km (d) 11.25 km
2. 234 km, 63.2 km, 84 km, 171.2 km
3. 2.4 km
4. 105 km
5. (a) 1.4 cm (b) 4.2 cm (c) 84 cm
6. 18 km; 30 cm
7. (a) 16.5 km (b) 33 cm
8. (a) $1 : 400\ 000$
 $1 : 480\ 000$ (b) $1 : 40\ 000$ (c) $1 : 60\ 000$ (d)
9. $1 : 350\ 000$ (a) $1 : 700\ 000$ (b) $1 : 525\ 000$ (c) $1 : 393\ 750$
10. 141 m
11. (a) $1 : 540\ 000$ (b) about 19.5 km
12. $0.1125\ \text{km}^2$

A4.4 Proportional Division

1. 2 litres of oxygen, 8 litres of nitrogen
2. 18 boys, 45 girls
3. Ben - 80, Cheryll - 60
4. (a) £7.05, £5.64 (b) £18.65, £14.92 (c) £13.33, £10.67

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5. (a) 500 g, 300 g, (b) 125 g, 75 g (c) 187.5 g, 112.5 g
6. £25 000, £30 000, £45 000
7. £8000, £6000, £4000, £2000
8. Ahmed: 90, Afzal: 150
9. apples: 2kg; bananas: 2.4 kg; oranges: 1.6 kg
10. 40
11. 50 g