

S3 Credit Home Exercises: Answers

Ex 1

- $2\frac{5}{24}$
- 2
- £21
- $a = 43$ vertically opposite angle
 $c = 43$ alternate angle
- $b = 137$ supplementary angle
 $d = 43$ corresponding angle
- 112 km/hr
- $2 \cdot 15 \square 10^{23}$

Ex 2

- 180
- 130.4
- (a) 24 litres (b) $33\frac{1}{3}$ litres
- (a) 20 cm (b) 50 minutes
- 226 cm^2
- $7 \cdot 16 \square 10^5$

Ex 3

- $3\frac{4}{9}$
- (a) -2 (b) 3 (c) -5 (d) 7
- (a) 36 items (b) 14 minutes
- 30 cm
- No; time taken 50 mins so arrives 5 mins late at 3 35 pm.
or No; top speed is under the required $133\frac{1}{3}$ mph.
or No; maximum distance travelled, 90 miles, is less than required.
- $1 \cdot 19 \square 10^{24}$

Ex 4

- $\frac{5}{18}$
- 7
- $x = 7$
- $a = 50$ alternate angle
 $c = 55$ angle sum in a triangle
- $b = 50$ corresponding angle
- 20%
- 12 14 pm
- $5 \cdot 38 \square 10^{22}$

Ex 5

- (a) -18 (b) -3 2. $y = 3$
- (a) 36 km (b) 40 min (c) 24 km/hr (d) 43.2 km/hr
- $4 \cdot 52 \pi 10^{22}$ 5. 18.7 cm

Ex 6

- $\frac{14}{15}$ 2. 8.5 3. $a = 6, b = -9, c = -10$
- 20% 5. Yes; speed 70.9 mph is over the speed limit
- (a) 13.4 cm (b) 5.7 cm

Ex 7

- $\frac{20}{27}$ 2. $2x^2 + 7x - 15$ 3. 12
- $x = 4$ 5. (a) 1 hour 48 mins (b) (i) 20 km/hr (ii) 10 km/hr
- show $AB^2 + BC^2 = AC^2$, by the Converse of Pyth. Thm. etc

Ex 8

- $3x^2 - 14x + 8$ 2. -1 3. $2t + 26$
- (a) 6 km (b) (i) 12 km/hr (ii) 6 km/hr
- (a) 36 cm (b) show $AC^2 + CD^2 = AD^2$, by the Converse of Pyth. Thm. etc
(c) 756 cm²

Ex 9

- $\frac{3}{10}$
- $t^2 - 6t + 9$
- $x = 3$
- $x = 10.5$
- (a) (i) by $AB^2 = 4^2 + 2^2$ (ii) by $BC^2 = 6^2 + 3^2$ (iii) by $AC^2 = 7^2 + 4^2$
(b) show $AB^2 + BC^2 = AC^2$, by the Converse of Pyth. Thm. etc
- 592 hours

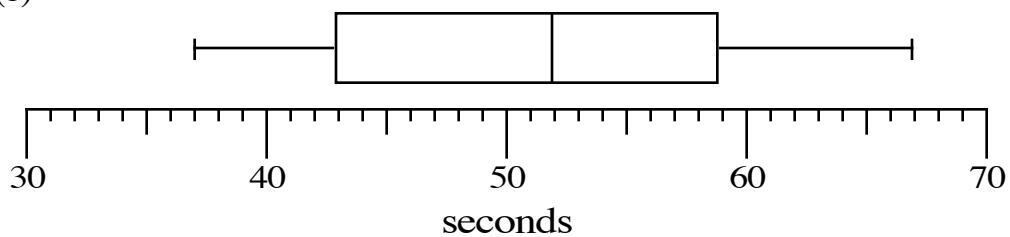
Ex 10

- $\frac{17}{30}$
- $3y^2 + 3$
- 19
- $x = 6.5$
- 16 cm
- 34.8 minutes

Ex 11

- 20
- $x^3 + 5x^2 + x - 10$
- $x = -7$
- $x = 27$
- (a) $L = 37$, $Q_1 = 43$, $Q_2 = 52$, $Q_3 = 59$, $H = 67$

(b) (c) 8



Ex 12

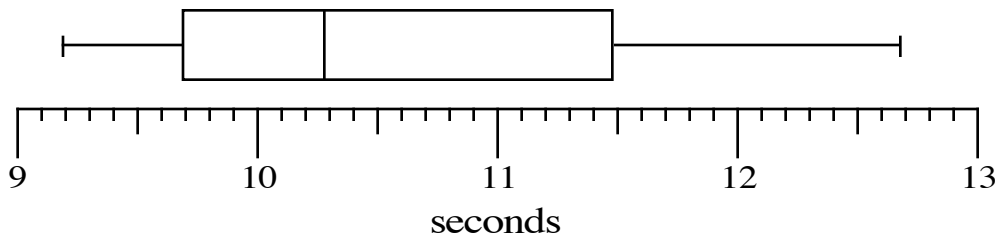
- $2\frac{3}{4}$
- $x = 9$
- (a) $A = 10$, $B = 42$ (b) 25%
- (a) 8 cm (b) 40 cm^2 (c) 50 cm^2
- 15.9 years

Ex 13

- (a) $a = 2, b = -3, c = 6$ (b) $P(4,3)$
- (a) $x^2 \mp 6x + 9$ (b) $x^2 \mp 9$ (c) $18 \mp 6x$
- $x = 160$
- (a) $x = 11.6$ (b) $y = 34.9$

Ex 14

- $x = 2$
- $a = 4, b = 2$
- (a) (b) 0.9



- (a) $x = 33.7$ (b) $y = 35.5$

Ex 15

- $2 \frac{1}{15}$
- $t + 10$
- (a) (i) $x + 3y$ (ii) $3x \mp 2y$ (b) $x + 3y = 10, 3x \mp 2y = 8$ (c) $x = 4, y = 2$
- $h = 8.7$
- 785 cm^3

Ex 16

- (a) $a = -6, b = 3, c = 6$ (b) $P(2,4)$ 2. $2 \frac{5}{16}$
- (a) 757 cm^2 (b) 3927 cm^3
- (a) 4.34 ∓ 10^7 metres (b) 95.0 minutes