

UNIT 4 ANSWERS

UNIT 4: NUMBER 4

EXERCISE 1

1 ►

Original value	Compound percentage p.a	Time (yrs)	New value
100	+2	3	106.1
500	+4	5	608.3
360	+6	7	541.3
1250	+8	9	2498.8

2 ►

Original value	Compound percentage p.a	Time (yrs)	New value
100	-2	3	94.1
500	-4	5	407.7
360	-6	7	233.5
1250	-8	9	590.2

3 ► a £13 112.72 b £13 911.29 c £16 127.00

4 ► a \$2205 b \$2431.01 c \$3257.79

5 ► €216.65

6 ► 8280

7 ► \$1 310 796

8 ► €38 689

EXERCISE 1*

1 ►

Original value (€)	Compound percentage p.a	Time (yrs)	New value (€)
128.1	+12	3	180
1985.6	+8	12	5000
13 522.5	-15	5	6000
1670.18	-5	10	1000

2 ► £1495.05

3 ► €4 317 850

4 ► €48.23

5 ► \$3 102 512

6 ► €5 150 976

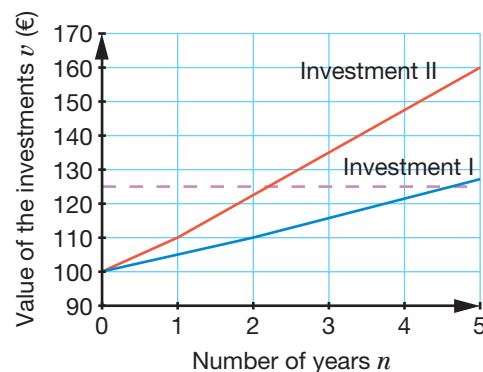
7 ► 14.2 yrs so 15 yrs

8 ► 9.6 yrs so 10 yrs

ACTIVITY 1

Number of years n	0	1	2	3	4	5
Investment I (€)	100	105	110	116	122	128
Investment II (€)	100	110	121	133	146	161

Looking carefully both graphs are curves.



Investment I: 25% by about 4.6 yrs.

Investment II: 25% by about 2.3 yrs.

EXERCISE 2

1 ► \$40

2 ► \$30

3 ► \$60

4 ► \$40

5 ► \$74.11

6 ► €25 100

7 ► €2430

8 ► \$23

9 ► \$180 000

10 ► \$3.50

EXERCISE 2*

1 ► \$60

2 ► \$400

3 ► 62.5 cm

4 ► €73 000

5 ► 5000

6 ► 20

7 ► 80

8 ► 4000

9 ► 3 747 759

10 ► £995 662

EXERCISE 3

REVISION

1 ► 2800 RM

2 ► 4400 ₹

3 ► £1 687 500

4 ► \$1.88

5 ► £15 315.38

6 ► 1800

EXERCISE 3*

REVISION

1 ► 9775 ¥

2 ► \$1 012 000

3 ► 64 200 ₪

4 ► \$11 375

5 ► a £9261

b Graph A

c £3700

6 ► 583 217.59

EXAM PRACTICE: NUMBER 4

1 ► a \$1344

b \$1056

2 ► \$28 350

3 ► 824 500

4 ► £28 800 000

5 ► \$64 739 928

6 ► 78.6 km/h

7 ► 5 265 680

UNIT 4: ALGEBRA 4

EXERCISE 1

- 1 ► 4.5 cm 2 ► 44 cm; 154 cm²
 3 ► $h = 8$ cm 4 ► $YZ = 4$ cm
 5 ► $h = 4.7$ cm 6 ► 11.7 km
 7 ► 150 million km
 8 ► a 9.42×10^8 km b 1.08×10^5 km/h

EXERCISE 1*

- 1 ► 14 cm 2 ► $x = 10$ cm
 3 ► $h = 5.5$ cm 4 ► 5.30 cm²
 5 ► 5.83 units 6 ► 10.5 cm² for each
 7 ► 39 800 km 8 ► Obtuse
 9 ► 3.71 cm 10 ► 8.37 cm

EXERCISE 2

- 1 ► $x = a - 2$ 2 ► $x = 5 + p$
 3 ► $x = c - a$ 4 ► $x = \frac{b}{5}$
 5 ► $x = \frac{(b-a)}{3}$ 6 ► $x = \frac{(t-s)}{2}$
 7 ► $x = \frac{4-b}{a}$ 8 ► $x = \frac{f+g}{e}$
 9 ► $x = \frac{c}{a+b}$ 10 ► $x = \frac{(d-8b)}{c}$
 11 ► $x = \frac{(a-3b)}{3}$ 12 ► $x = \frac{c-ab}{a}$
 13 ► $x = ab$ 14 ► $x = \frac{qr}{p}$
 15 ► $x = r(p+q)$ 16 ► $x = qr - p$

EXERCISE 2*

- 1 ► $x = \frac{c-b}{a}$ 2 ► $x = cd + b$
 3 ► $x = \frac{cd}{b}$ 4 ► $x = \frac{e}{a} - c$
 5 ► $x = \frac{P-b^2}{\pi}$ 6 ► $x = \frac{Td^2}{b}$
 7 ► $x = \pi - b$ 8 ► $x = \frac{ab-c}{d}$
 9 ► $\frac{a}{b}$ 10 ► $\frac{a+b}{c}$
 11 ► $\frac{s}{(p-q)}$ 12 ► $r = \frac{A}{2\pi}$
 13 ► $h = \frac{3V}{\pi r^2}$ 14 ► $x = \frac{(y-c)}{m}$
 15 ► $s = \frac{(v^2 - u^2)}{2a}$ 16 ► $a = 2m - b$
 17 ► $a = \frac{S}{n} - \frac{(n-1)d}{2}$ 18 ► $a = \frac{S(1-r)}{(1-r^n)}$

EXERCISE 3

- 1 ► $x = \pm \sqrt{\frac{b}{a}}$ 2 ► $x = \pm \sqrt{ab}$
 3 ► $x = \pm \sqrt{2D - C}$ 4 ► $x = \pm \sqrt{a(c-b)}$
 5 ► $x = \pm \sqrt{\frac{c-2b}{a}}$ 6 ► $x = \frac{t}{a+d}$
 7 ► $x = \frac{ab}{a-1}$ 8 ► $x = \frac{2b-a}{a-b}$
 9 ► $r = \pm \sqrt{\frac{A}{4\pi}}$ 10 ► $v = \pm \sqrt{ar}$
 11 ► $r = \pm \sqrt[3]{\frac{3V}{4\pi}}$ 12 ► $l = \left(\frac{T}{2\pi}\right)^2$

EXERCISE 3*

- 1 ► $x = \pm \sqrt{\frac{S}{R}}$ 2 ► $x = \pm \sqrt{\frac{g-a}{c}}$
 3 ► $x = \frac{c}{b-a}$ 4 ► $x = \frac{c-f}{e+d}$
 5 ► $x = \frac{\tan b + ac}{1-a}$ 6 ► $x = t(p^2 - s)$
 7 ► $x = \pm \sqrt{Ab - Da}$ 8 ► $x = \pm \sqrt{\frac{3V}{\pi h}}$
 9 ► $v = \pm \sqrt{2gh}$ 10 ► $x = \pm \sqrt{\frac{1}{y} - a^2}$
 11 ► $a = b \pm \sqrt{12s}$ 12 ► $Q = \frac{1}{p} \left(\frac{S}{r}\right)^2$
 13 ► $d = \left(\frac{k}{F}\right)^3$ 14 ► $x = \pm \sqrt{1 - \frac{1}{y^2}}$
 15 ► $c = \frac{b^2 - (2ax + b)^2}{4a}$ 16 ► $x = \frac{p(y+1)}{y-1}$

EXERCISE 4

- 1 ► a 18 b 10
 2 ► a 0.15 b 200
 3 ► a 155 min b 2 kg
 4 ► a 2350 b 25 750
 5 ► a $A = \frac{\pi r^2}{4}$, $P = r\left(2 + \frac{\pi}{2}\right)$
 b $A = 19.6$ cm², $P = 17.9$ cm
 c 11.28 d 14.0 e 4.55

EXERCISE 4*

- 1 ► a 339 b 4
 2 ► a 53.75 m b 80 km/h
 3 ► a 16 km b 195 m
 4 ► a 6.67 b 20
 5 ► a $A = r^2(1 + \pi)$, $P = 2r(2 + \pi)$
 b $A = 265$ cm², $P = 82.3$ cm
 c 4.91 d 3.89 e 2.48

EXERCISE 5

REVISION

- 1 ▶ $x = \frac{b}{a}$ 2 ▶ $x = ac$
 3 ▶ $x = \frac{a-c}{b}$ 4 ▶ $y = \pm \sqrt{\frac{d}{b}}$
 5 ▶ $y = \frac{b^2}{a}$ 6 ▶ $y = \frac{d}{a-c}$
 7 ▶ $y = \frac{bc}{c-1}$
 8 ▶ a 35 km b 200 m c 27 km
 9 ▶ a \$26 b 100 c \$1800
 10 ▶ a $A = \frac{\pi r^2}{2}, P = r(2 + \pi)$
 b $A = 39.3, P = 25.7$
 c 3.57 d 11.7 e 3.27

EXERCISE 5*

REVISION

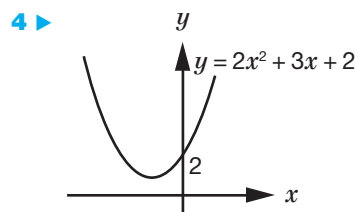
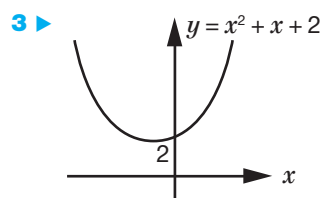
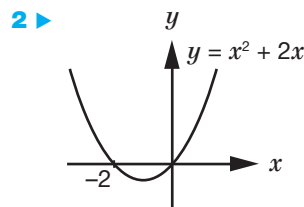
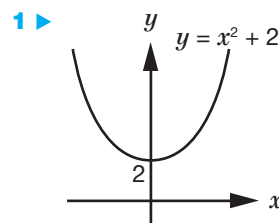
- 1 ▶ $x = \frac{c-b}{a}$ 2 ▶ $x = \frac{b}{a-d}$
 3 ▶ $x = \frac{ab - \tan c}{a}$ 4 ▶ $y = \pm \sqrt{\frac{a}{b-c}}$
 5 ▶ $y = \frac{ac-d}{a-b}$ 6 ▶ $y = b - d(c-a)^2$
 7 ▶ a $A = \frac{r^2}{2}(1 + \pi), P = r(2 + \sqrt{2} + \pi)$
 b $A = 18.6, P = 19.7$
 c 2.41 d 5.19 e 3.17
 8 ▶ a $\frac{2}{3}$ b 3 s c 2.45 m
 9 ▶ 3 : 1
 10 ▶ a 0.75 b $\frac{m_1 - t}{m_1 t + 1}$ c 1

EXAM PRACTICE: ALGEBRA 4

- 1 ▶ a $x = \frac{d-f}{3}$
 b $x = \frac{p}{2} - q$ or $x = \frac{p-2q}{2}$
 c $x = bc - a$
 2 ▶ a $x = \sqrt{3C+B}$
 b $x = \sqrt{y(a+z)}$
 c $x = \frac{pq}{p-1}$
 3 ▶ a $a = \frac{2(s-ut)}{t^2}$
 b $a = 7.2 \text{ m/s}$
 4 ▶ a $P = r(\pi + 2)$
 b $A = \frac{\pi r^2}{2}$
 c $2 + \frac{4}{\pi} = 3.27$ to 3 s.f.

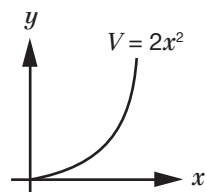
UNIT 4: GRAPHS 4

EXERCISE 1



5 ▶ b

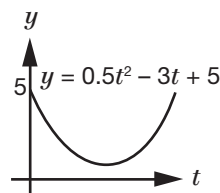
x	0	0.4	0.8	1.2	1.6	2.0
V	0	0.32	1.28	2.88	5.12	8



- c $1.41 \text{ m} \times 1.41 \text{ m}$
 d 0.72 m^3
 e $1.23 \leq x \leq 1.8$

6 ▶

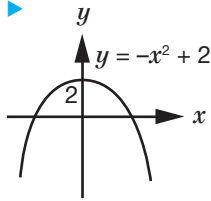
t	0	1	2	3	4	5	6
y	5	2.5	1	0.5	1	2.5	5



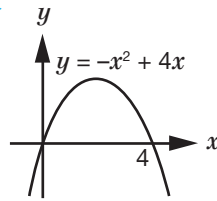
- b 5 m c 0.5 m, 3 s
 d 0 m e $0 \leq t \leq 0.76, 5.24 \leq t \leq 6$

EXERCISE 1*

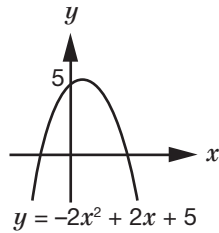
1 ▶



2 ▶

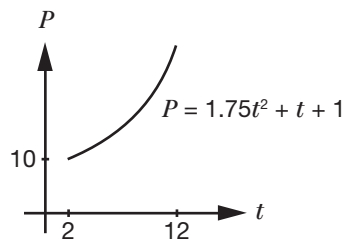


3 ▶

4 ▶ a $k = 1.75 \Rightarrow P = 1.75t^2 + t + 1$

t	2	4	6	8	10	12
P	10	33	70	121	186	265

b

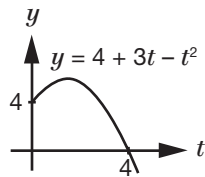


c Accurate answer is 49 750 000. Only approximate answers will be available from the graph.

d 7.2 days approx

5 ▶ a

t	0	1	1.5	2	3	4
y	4	6	6.25	6	4	0



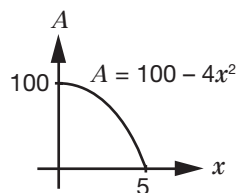
b 4 m c 4 pm

d 6.25 m, 1:30 pm

e Between 12:23 pm and 2:37 pm

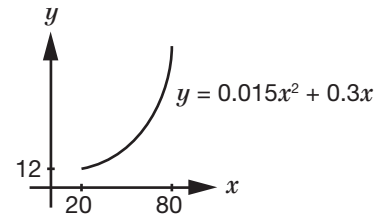
6 ▶ a $A = (10 - 2x)^2 + 4x(10 - 2x) = 100 - 4x^2$

b

c $2.5 \leq x \leq 3.5$

7 ▶ a

x	20	30	40	50	60	70	80
y	12	22.5	36	52.5	72	94.5	120



b 61.9 m c 48.6 mph d 0.7 s

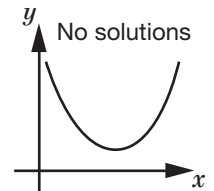
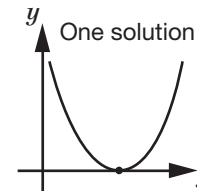
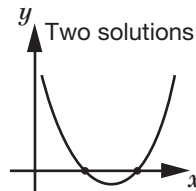
EXERCISE 2

1 ▶ $x = -2$ or $x = 3$ 2 ▶ $x = 3$ or $x = 2$ 3 ▶ $x = -1$ or $x = 3$ 4 ▶ $x = 2$ or $x = 5$ 5 ▶ $x = 0$ or $x = 5$

EXERCISE 2*

1 ▶ $x = -1$ or $x = \frac{1}{2}$ 2 ▶ $x = \frac{1}{2}$ or $x = 2$ 3 ▶ $x = \frac{1}{2}$ or $x = -\frac{1}{2}$ 4 ▶ $y = x^2 - 6x + 5$ 5 ▶ $y = x^2 - 7x + 10$ 6 ▶ $y = x^2 - 6x + 9$ 7 ▶ $y = x^2 - 3x - 4$

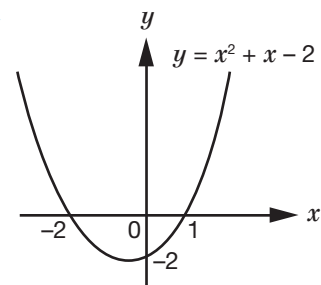
8 ▶



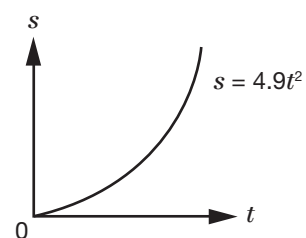
EXERCISE 3

REVISION

1 ▶

2 ▶ $x \approx 0.6$ or 3.4 3 ▶ b $x \approx -1.4$ or 3.4 4 ▶ a 4.9 cm^2 b 4.5 cm c 12.96 cm

5 ▶ a

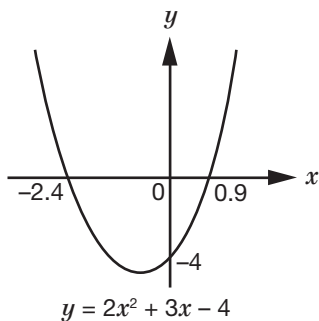
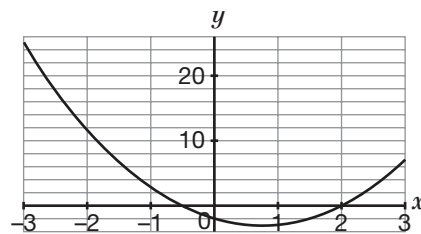
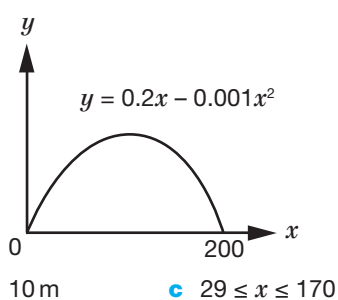


b 30.6 m c 3.2 s

EXERCISE 3*

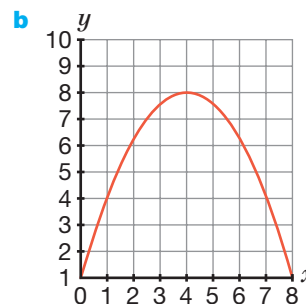
REVISION

1 ►

2 ► $x \approx -2.6$ or 1.1 3 ► **b** $x \approx -2.6$ or 1.1 4 ► **b** 28.3 m5 ► **a****b** $x = -\frac{1}{2}$ or 2

3 ► **a** If $p = 4t - kt^2$: $t = 4$, $p = 8$
 $\Rightarrow 8 = 16 - 16k$, $k = \frac{1}{2}$

t	0	2	4	6	8
p	0	6	8	6	0

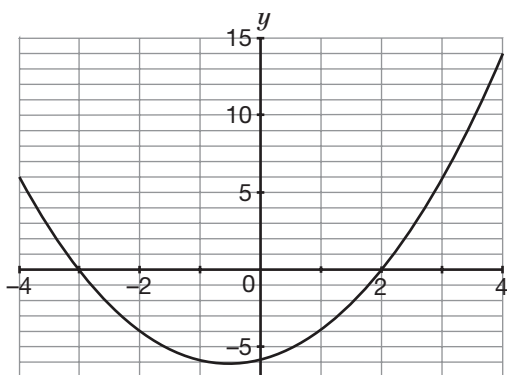


c (i) $p_{\max} = \$8$ million at $t = 4$ years
 (ii) $2 \leq t \leq 6$

EXAM PRACTICE: GRAPHS 4

1 ►

x	-4	-3	-2	-1	0	1	2	3	4
y	6	0	-4	-6	-6	-4	0	6	14

2 ► **a**

x	-3	-2	-1	0	1	2	3
$2x^2$	18	8	2	0	2	8	18
$-3x$	9	6	3	0	-3	-6	-9
-2	-2	-2	-2	-2	-2	-2	-2
y	25	12	3	-2	-3	0	7

UNIT 4: SHAPE AND SPACE 4

EXERCISE 1

- 1 ► 2.46 2 ► 5.07
 3 ► 8.09 4 ► 9.44 cm
 5 ► 8.76 cm 6 ► 10.1 m
 7 ► 1.61 m 8 ► 67.6 m

EXERCISE 1*

- 1 ► 6.57 m 2 ► 6.60 cm
 3 ► **a** 2.5 m **b** 4.33 m
 c 20.6 m^2 **d** 31.7°
 4 ► 6.93 m^2
 5 ► **a** 1070 m **b** 797 m
 6 ► 155 m
 7 ► 5.88 cm
 8 ► 452 m

EXERCISE 2

- 1 ► 48.6° 2 ► 41.4°
 3 ► 46.1° 4 ► 71.2°
 5 ► 19.5° 6 ► 80.1°
 7 ► 78.9° 8 ► 23.6°
 9 ► 1.72° 10 ► 70.5°

EXERCISE 2*

- 1 ► 37.8° 2 ► 37.7°
 3 ► 58.6° 4 ► 29.6°
 5 ► 57.3° 6 ► 29.0°
 7 ► $014.9^\circ; 194.9^\circ$ 8 ► 72.7°
 9 ► 33.6° 10 ► 57.3°

- 6 ► a 16.2 m
 b 16.2 s
 c 432 m
 7 ► $p = 25$
 8 ► $q = 5$

EXERCISE 3

- 1 ► $x = 5$ 2 ► $x = 8.66$
 3 ► $x = 5.18$ 4 ► $\alpha = 30.0^\circ$
 5 ► $\alpha = 60.0^\circ$ 6 ► 9.24
 7 ► 32.2° 8 ► 49.7°
 9 ► 1.308 cm 10 ► 41.6°
 11 ► 62.3° 12 ► 250 m
 13 ► 10.0° 14 ► 5.47 km
 15 ► 63.6°

EXERCISE 3*

- 1 ► $x = 18$ 2 ► $x = 22$
 3 ► $x = 100$ 4 ► $x = 10$
 5 ► $x = 20$ 6 ► $x = 200$
 7 ► $\alpha = 45^\circ$ 8 ► $\alpha = 10^\circ$
 9 ► $\alpha = 30^\circ$
 10 ► $\alpha = 30^\circ, x = 8.7, y = 2.5$
 11 ► a 4.66 km N b 17.4 km W
 12 ► 195 m, 442 m
 13 ► $H = 22.2$ m 14 ► $d = 611$ m
 15 ► 7.99 km 16 ► 1.5 m

EXERCISE 4

REVISION

- 1 ► $x = 14.1$ cm, $\theta = 70.5^\circ$
 2 ► $x = 7.87$ m, $\theta = 10.2^\circ$
 3 ► $x = 16.8$ km, $\theta = 39.9^\circ$
 4 ► $x = 11.7$ cm, $\theta = 31.2^\circ$
 5 ► $x = 2.38$ m, $\theta = 4.62^\circ$
 6 ► $x = 14.3$ km, $\theta = 79^\circ$
 7 ► 43.3 cm²
 8 ► 33.7°

EXERCISE 4*

REVISION

- 1 ► a 0.5 b $\theta = 30^\circ$
 2 ► a 20.5 m b 19.1 m c 20.7 m
 3 ► Ascends in 3 min 52 s, so reaches surface with 8 seconds to spare.
 4 ► a 17.2 km, 284°
 b 18:11:10
 5 ► 3.56 m

EXAM PRACTICE: SHAPE AND SPACE 4

- 1 ► a 4.91 m b 0.382 m
 2 ► a (i) 51.3° (ii) 321.3° (iii) 141.3°
 b 6.24 km
 3 ► a (i) 4880 km (ii) 4090 km
 (iii) 38 200 km (iv) 123°
 b Tangent is perpendicular to radius.
 Therefore the smallest possible value of angle ODS is 90° , since a smaller value would mean that the signal would pass back into Earth before reaching Delhi.
 c 77 000 km
 d 0.26 s

UNIT 4: HANDLING DATA 3

EXERCISE 1

- 1 ► $Q_1 = 1, Q_2 = 6, Q_3 = 9, \text{IQR} = 8$
 2 ► $Q_1 = 2, Q_2 = 7, Q_3 = 12, \text{IQR} = 10$
 3 ► $Q_1 = -1.5, Q_2 = 1, Q_3 = 5, \text{IQR} = 6.5$
 4 ► $Q_1 = \frac{3}{8}, Q_2 = \frac{1}{2}, Q_3 = \frac{3}{4}, \text{IQR} = \frac{3}{8}$
 5 ► $Q_1 = 12.5$ cm, $Q_2 = 25$ cm, $Q_3 = 45$ cm,
 IQR = 32.5 cm
 6 ► 1.5, 4, 7, 5.5
 7 ► 0.5, 4, 6.5, 6
 8 ► 1.5, 3.5, 8, 6.5

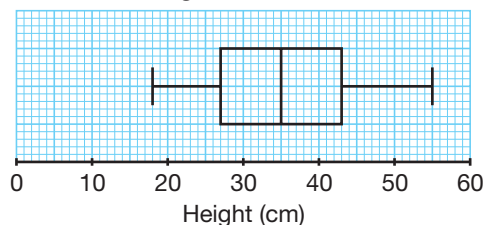
EXERCISE 1*

- 1 ► $Q_2 = 50.5, \text{IQR} = 64.5, \text{range} = 120$
 2 ► $Q_2 = 14.2, \text{IQR} = 2.1, \text{range} = 3.5$
 3 ► $Q_2 = 4, \text{IQR} = 2.5, \text{range} = 5$
 4 ► $Q_2 = 12, \text{IQR} = 17, \text{range} = 27$
 5 ► a Mean = 1150, mode = 700,
 median = 750; median
 b Range = 3300, IQR = 100; IQR
 6 ► a Mean = 47, mode = 70, median = 49;
 mean or median
 b Range = 70, IQR = 25.5; IQR
 7 ► a $x = 6$ b $x = 2$
 c $x = 3$ d $x = 4$
 8 ► a $x \geq 5$ b $x = 8$
 c $x = 7$ d $x = 6$

EXERCISE 2

- 1 ► a 26 minutes
b $29 - 21 = 8$ minutes
- 2 ► a 37 cm
b

Heights of shrubs

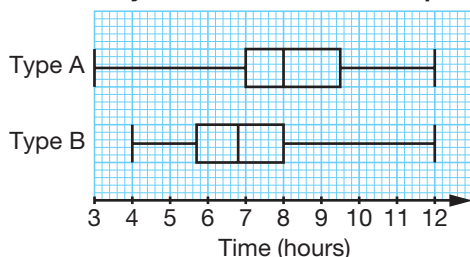


20%

- 3 ► a 80 tomatoes
b Minimum = 155 g, maximum = 205 g
c Median = 186 g, IQR = $191 - 176 = 15$ g
d 100 tomatoes
e Minimum = 160 g, maximum = 210 g
f Median = 178 g, IQR = $183 - 174 = 9$ g
g The median for variety X (186) is greater than the median for variety Y (178) so, on average, tomatoes from variety X weigh more than tomatoes from variety Y. The range is the same for both varieties (50 g), but the IQR for variety Y (9) is significantly smaller than the IQR for variety X (15), so the masses of tomatoes from variety Y are more consistent.

4 ► a

Battery Life for different mobile phones



Type A: Median = 8 hours, LQ = 7 hours, UQ = 9.5 hours

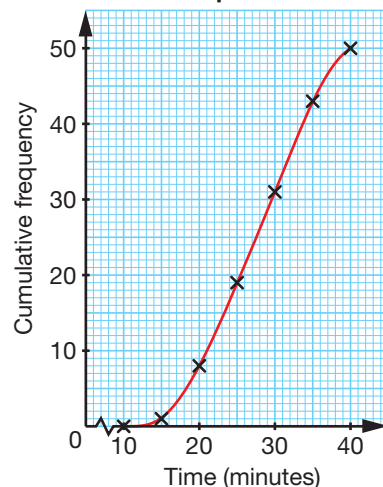
Type B: Median = 6.8 hours, LQ = 5.7 hours, UQ = 8 hours

- b Type B is more likely to last longer (median is higher). However, its range is also larger so the length of time it lasts is more variable.

EXERCISE 2*

1 ► a

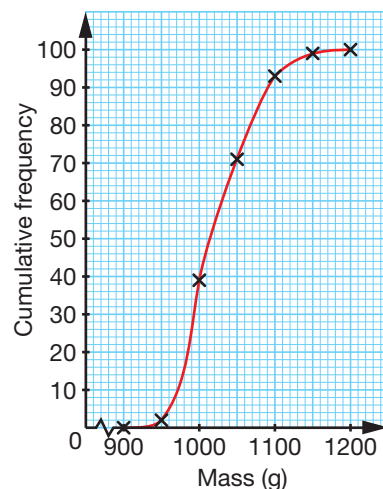
Time to complete homework



- b 27 to 28 minutes
c 22 to 23 minutes
d 32 to 33 minutes
e 10 to 11 minutes

2 ► a

Masses of cakes



- b Median = 1010 g to 1020 g, LQ = 990 g, UQ = 1060 g
c Approximately 85 cakes
d 90 cakes are estimated to weigh less than 1090 g

3 ► a

Marks, x , out of 150	F
$0 < x \leq 30$	5
$30 < x \leq 60$	13
$60 < x \leq 90$	27
$90 < x \leq 120$	40
$120 < x \leq 150$	50

- b** (i) $Q_2 = 87$
 (ii) $Q_1 = 58$
 (iii) $Q_3 = 115$
 (iv) $IQR = 57$
c Approx $\frac{6}{50} = \text{top } 12\%$

4 ▶ a

Weight, x kg per day	F
$50 < x \leq 70$	8
$70 < x \leq 90$	23
$90 < x \leq 110$	37
$110 < x \leq 130$	46
$130 < x \leq 150$	50

- b** (i) $Q_2 = 95$ (ii) $Q_1 = 77$ (iii) $Q_3 = 110$
 (iv) $IQR = 33$
c 100 kg corresponds to $F = 30$, so only 20 days > 100 kg therefore not 'healthy'.

EXERCISE 3

REVISION

- 1 ▶ a** $Q_1 = 2$, $Q_2 = 4.5$, $Q_3 = 9$, $IQR = 7$,
 range = 9
b $Q_1 = 3$, $Q_2 = 9$, $Q_3 = 17$, $IQR = 14$,
 range = 16
2 ▶ a $Q_1 = 5$, $Q_2 = 11$, $Q_3 = 17$, $IQR = 12$,
 range = 18
3 ▶ a $Q_1 = 19.5$, $Q_2 = 27.5$, $Q_3 = 33.5$,
 $IQR = 14$, range = 37
b C, D, E, F
4 ▶ a

x	$0 < w \leq 2$	$2 < w \leq 4$	$4 < w \leq 6$	$6 < w \leq 8$	$8 < w \leq 10$
Frequency	4	8	12	10	6
F	4	12	24	34	40

- b** (i) $Q_2 = 5.5$
 (ii) $Q_1 = 3.5$
 (iii) $Q_3 = 7.5$
 (iv) $IQR = 2$

EXERCISE 3*

REVISION

- 1 ▶** $Q_1 = 6.5$, $Q_2 = 30.5$, $Q_3 = 72.5$, $IQR = 66$,
 range = 99
2 ▶ 2, 5
3 ▶ a $Q_2 = 42$, $IQR = 12.5$, range = 21
b (i) D, E (ii) F, G
4 ▶ a $x = 5$
b

h	$0.5 < w \leq 1.0$	$1.0 < w \leq 1.5$	$1.5 < w \leq 2.0$	$2.0 < w \leq 2.5$
Frequency	6	9	$2x$	x
F	6	15	25	30

- c** (i) $Q_2 = 1.5$ (ii) $IQR = 0.8$
d Mean = 1.48 m

EXAM PRACTICE: HANDLING DATA 3

- 1 ▶ a** $R = 27$
b $Q_2 = 9.5$
c $IQR = 22.5$
2 ▶ a $R = 15$
b $Q_2 = 10$
c $IQR = 7.5$

3 ▶ a

Marks, $x\%$	Boys F	Girls F
$0 < x \leq 20$	2	1
$20 < x \leq 40$	10	3
$40 < x \leq 60$	19	11
$60 < x \leq 80$	25	21
$80 < x \leq 100$	30	30

Correct cumulative frequency curves $\times 2$

Boys: $Q_2 = 53$ Girls: $Q_2 = 70$

$IQR = 40$ $IQR = 30$

- b** The girls' median of 17% is higher than the boys' median, so they are better at Chinese in general.

Girls are also more consistent than boys since their IQR is smaller than the boys' IQR .