M1.

(a) − 4 and 2

B1 for each value in correct place in table

B2

Additional Guidance

− 4 when $x = -2$ and 2 when $x = 1$

(b) 6 or 7 of *their* points plotted correctly

tolerance $\pm\frac{1}{2}$ *square*

M1

Fully correct smooth curve

tolerance $\pm\frac{1}{2}$ *square*

A1

Additional Guidance

Two curves drawn: Mark the better curve

(c) $y = -3$ correctly drawn

Any length > 2 cm

tolerance $\pm\frac{1}{2}$ *square*

B1

(d) −1.8 and 2.8

ft ***their*** *graph or correct*

tolerance $\pm\frac{1}{2}$ *square*

B1ft

Additional Guidance

If quadratic formula used, answers are −1.79 and 2.79

Do not accept embedded answers or coordinates

Must have two answers for ft

If 3 or more answers on ft treat as choice

[6]

M2.

(a) − 6, 3 and − 1

B1 for 1 or 2 correct

B2

(b) their 6 or 7 points plotted

$\pm \frac{1}{2}$ *square tolerance*

M1

Fully correct smooth curve

$\pm \frac{1}{2}$ *square tolerance*

A1

(c) Two correct readings from their graph at $y = -1.5$

B1 for each

$\pm \frac{1}{2}$ *square tolerance*

B2ft

Additional Guidance
Accept the answers given in coordinates provided correct for their curve
Answers must come from their graph

[6]

M3.(a) −2, −3, −2

B1 for 1 or 2 correct

B2

(b) their 5 points plotted

Allow one error

$\pm \frac{1}{2}$ *square*

M1

Fully correct with a smooth curve

± $\frac{1}{2}$ *square*

A1

(c) Correct reading at $y = 0.5$

ft their curve

± $\frac{1}{2}$ *square*

B1 ft

Second correct reading at $y = 0.5$

ft their curve

± $\frac{1}{2}$ *square*

Award SC1 for [1.8, 1.9] and [−1.9, −1.8] only if graph is missing.

B1 ft

[6]

M4.

Gives coordinates of at least two points

M1

Correctly plots their points

M1

Correct graph from $x = -3$ to $x = 3$

A1

[3]

M5.(a) 1, 0, 4

B1 for 2 correct

B2

(b) their 5 points plotted correctly

± $\frac{1}{2}$ *square*

M1

Fully correct smooth curve

± $\frac{1}{2}$ *square*

A1

[4]

M6.(a) 1, 0, 4

B1 for 2 correct

B2

(b) their 5 points plotted correctly

± $\frac{1}{2}$ *square*

M1

Fully correct smooth curve

± $\frac{1}{2}$ *square*

A1

(c) Translation of their graph 3 units in negative y direction

± $\frac{1}{2}$ *square B1 for their translated 5 points plotted*

or fully correct graph

(−2, 1) etc

B1 for clear intention to translate 3 units in negative y direction

B2ft

[6]

M7. (a) −4, −3 and 5All three in correct position in table

B1 one correct in correct position

B2

(b) Their seven points plotted correctly

$\pm\frac{1}{2}$ *square*

B1 for 5 or 6 points correct

B2 ft

Six or seven points joined by smooth curve

Must be a U shape

B1

(c) Line drawn at $y = 2$

B1 ft

(d) (x =) −2.45

ft their graphs $\pm\frac{1}{2}$ *square*

Accept [−2.6, −2.3]

Accept $-\sqrt{6}$

B1 ft

(x =) 2.45

ft their graphs $\pm\frac{1}{2}$ *square*

Accept [2.3, 2.6]

Accept $\sqrt{6}$

Note: if coordinates are given, mark the x coordinates only

Award B1 B0 if both are correct.

B1 ft

[8]

M8.(a) −1, −3, 5

B1 for 1 or 2 correct

B2

(b) Axes drawn and labelled

B1 for x-axis from −2 to 2 (minimum)
B1 for y-axis from −3 to 5 (minimum)
Condone one missing x or y label

B2

Points plotted

ft 5 points

B1ft

Smooth curve through their 5 points

Must be a U shape

B1ft

[6]

M9.(a) 4

B1

–4

B1

(b) their 7 points plotted correctly

$\pm \frac{1}{2}$ *square*

B1 ft for their 5 or 6 points plotted correctly

B2 ft

Smooth curve

through their 7 points ± $\frac{1}{2}$ *square*

Must be a U shape

B1 ft

(c) [2.2, 2.4] or $\sqrt{5}$

ft their graph ± $\frac{1}{2}$ *square*

B1 ft

[−2.2, −2.4] or $-\sqrt{5}$

ft their graph ± $\frac{1}{2}$ *square*

B1 ft

[7]