



ACHIEVE ACADEMY

GCSE Maths — Higher Tier

Solving Quadratic Equations · Practice Booklet

NAME: _____

CLASS: _____

DATE: _____

☐ Developing

☒ Secure

☐ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Solving Quadratic Equations

Total marks available: 122

● Solving Quadratic Equations

Q1

[4 marks]

Solve $a^2 + 7a + 6 = 0$ using the quadratic formula.

Q2

[4 marks]

Solve $x^2 + 3x - 4 = 0$ using the quadratic formula.

Q3

[4 marks]

Solve $3y^2 - 13y + 4 = 0$.

Q4

[4 marks]

Solve $y^2 - 14y + 48 = 0$ using the quadratic formula.

Q5

[4 marks]

Solve $y^2 + 9y = 0$ using the quadratic formula.

Q6

[4 marks]

Solve $x^2 - 3x = 0$ using the quadratic formula.

Q7

[4 marks]

Solve $a^2 + 11a + 18 = 0$ using the quadratic formula.

Q8

[4 marks]

Solve $3a^2 - a - 2 = 0$.

Q9

[4 marks]

Solve $5a^2 - 27a + 10 = 0$.

Q10

[4 marks]

Solve $2b^2 + 15b - 8 = 0$.

Q11

[4 marks]

Solve $x^2 - 16x + 58 = 0$ by completing the square. Give your answers in surd form.

Q12

[4 marks]

Solve $a^2 - 5a - 2 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

Q13

[4 marks]

Solve $a^2 - 2a - 1 = 0$ by completing the square. Give your answers in surd form.

Q14

[4 marks]

Solve $a^2 + 6a - 4 = 0$ by completing the square. Give your answers in surd form.

Q15

[4 marks]

Solve $n^2 - 7n - 5 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

Q16

[4 marks]

Solve $b^2 - b - 4 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

Q17

[4 marks]

Solve $b^2 - 9b - 2 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

Q18

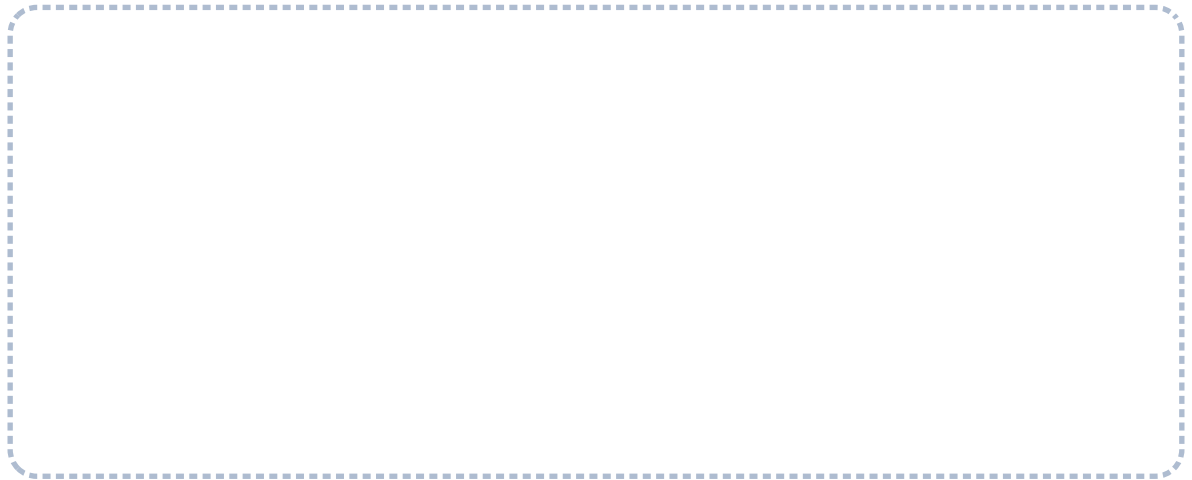
[4 marks]

Solve $n^2 + 12n + 17 = 0$ by completing the square. Give your answers in surd form.

Q19

[4 marks]

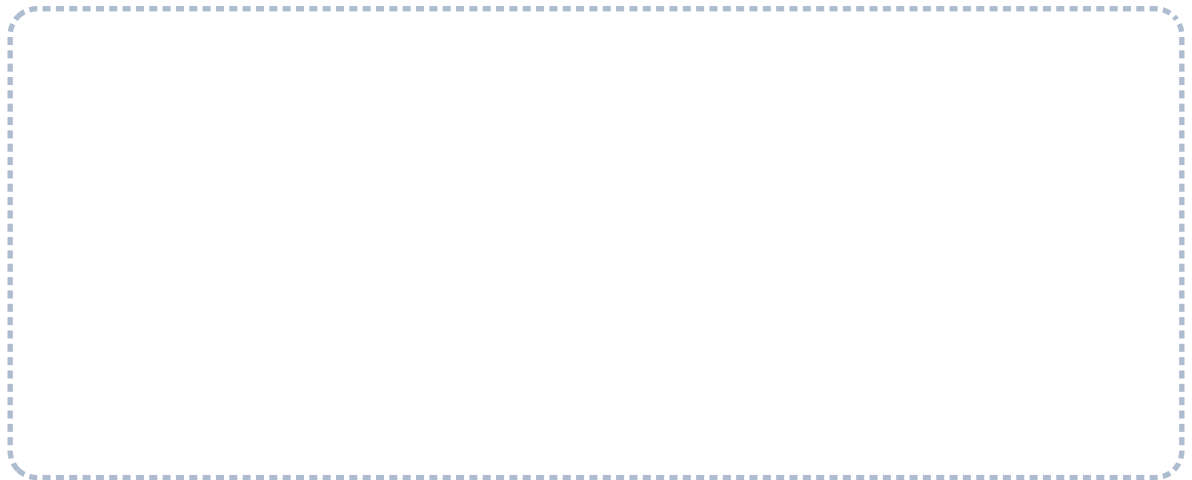
Solve $x^2 - 3x - 8 = 0$ using the quadratic formula. Give your answers to 2 decimal places.



Q20

[4 marks]

Solve $n^2 + 14n + 36 = 0$ by completing the square. Give your answers in surd form.



Q21

[4 marks]

Solve $3x^2 - 8x - 6 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

Q22

[4 marks]

Solve $2a^2 - 9a - 1 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

Q23

[4 marks]

Solve $3n^2 + 4n - 6 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

Q24

[4 marks]

Solve $4x^2 - 8x - 4 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

Q25

[4 marks]

Solve $4b^2 - 8b - 7 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

Q26

[4 marks]

Solve $5n^2 + 5n - 9 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

Q27

[5 marks]

A rectangle has width x cm and length $(x + 4)$ cm. Its area is 21 cm^2 . Form and solve an equation to find x .

Q28

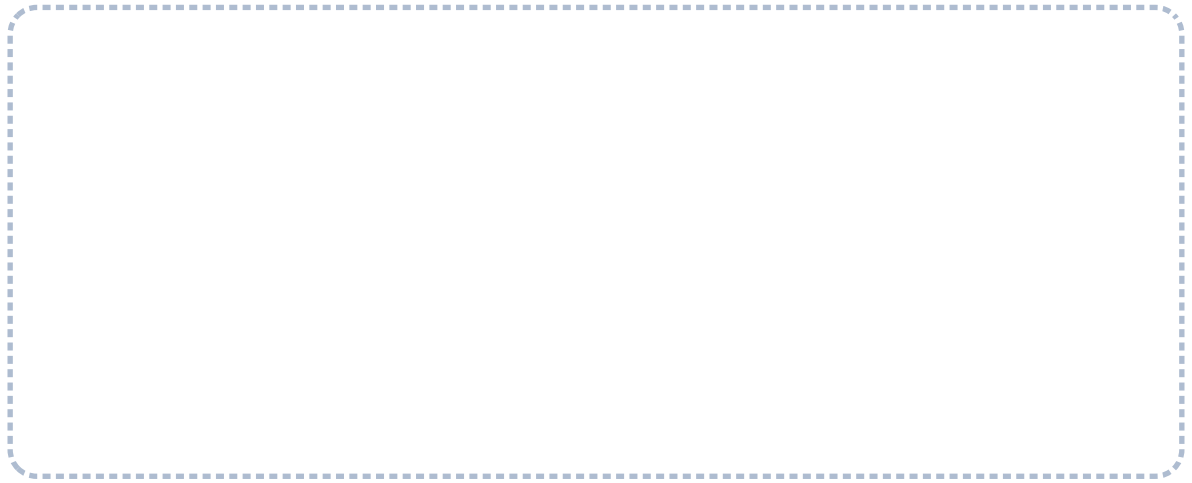
[4 marks]

Solve $5n^2 - n - 1 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

Q29

[5 marks]

A rectangle has width a cm and length $(a + 7)$ cm. Its area is 120 cm^2 . Form and solve an equation to find a .



Q30

[4 marks]

Solve $5x^2 - 5x - 2 = 0$ using the quadratic formula. Give your answers to 2 decimal places.

