

AQA, OCR, Edexcel

GCSE

GCSE Maths

The Quadratic Formula Answers

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Total Marks: /33

The Quadratic formula

1. Solve the following equations using the quadratic formula:

a. $x^2 + x - 12 = 0$ $x = -4, x = 3$

b. $x^2 + 3x = 4$ $x = -4, x = 1$

c. $x^2 - 5x = 5$ $x = \frac{5}{2} - \frac{3\sqrt{5}}{2}, x = \frac{5}{2} + \frac{3\sqrt{5}}{2}$

d. $2x^2 + 2x - 3 = 6$ $x = -\frac{1}{2} - \frac{\sqrt{19}}{2}, x = \frac{\sqrt{19}}{2} - \frac{1}{2}$

e. $x^2 = 5x - 6$ $x = 2, x = 3$

f. $\frac{(x^2+x)}{2} = 1$ $x = 1, x = -2$

g. $x^2 = 2(4x - 8)$ $x = 4$

h. $x(x + 5) = 16$ $x = -\frac{5}{2} - \frac{\sqrt{89}}{2}, x = \frac{\sqrt{89}}{2} - \frac{5}{2}$

i. $\frac{x(x+1)}{2} = 3$ $x = -3, x = 2$

(18 Marks)

2. Solve using the quadratic formula:

a. $5x^2 + 2x - 13 = 0$ $x = -\frac{1}{5} - \frac{\sqrt{66}}{5}, x = \frac{\sqrt{66}}{5} - \frac{1}{5}$

b. $5x^2 + 29x + 26 = 0$ $x = -\frac{29}{10} - \frac{\sqrt{321}}{10}, x = \frac{\sqrt{321}}{10} - \frac{29}{10}$

c. $5x^2 + 28x + 15 = 0$ $x = -5, x = -\frac{3}{5}$

d. $2x(x + 4) = -3$ $x = -2 - \sqrt{\frac{5}{2}}, x = \sqrt{\frac{5}{2}} - 2$

e. $2x = \sqrt{3x + 34}$ $x = \frac{3}{8} + \frac{\sqrt{553}}{8}$

f. $\frac{x-3}{x} + \frac{2x-3}{2} = 3$ $x = \frac{7}{4} - \frac{\sqrt{97}}{4}, x = \frac{7}{4} + \frac{\sqrt{97}}{4}$

(15 Marks)