

chapter

2

Algebra 2

Section 2.3 Solving quadratic and linear equations

PROJECT MATHS
Text & Tests 6

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Solve the following pairs of simultaneous equations, one linear and one quadratic.

$$2. \quad \begin{aligned} x^2 + y^2 &= 5 \\ x - y + 1 &= 0 \end{aligned}$$

① Rewrite linear

$$x = y - 1$$

② Sub into quadratic & solve

$$(y-1)^2 + y^2 = 5$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$y^2 - 2y + 1 + y^2 = 5$$

$$2y^2 - 2y - 4 = 0$$

$$y^2 - y - 2 = 0$$

$$(y-2)(y+1) = 0$$

$$\Rightarrow y = 2 \text{ or } y = -1$$

③ Sub back into linear

$$x = y - 1$$

$$y = -1 \Rightarrow x = -1 - 1 = -2$$

$$\text{pt } (-2, -1)$$

$$y = 2 \Rightarrow x = 2 - 1 = 1$$

$$\text{pt } (1, 2)$$

