

Algebra 1

chapter

1

Section 1.9 Solving simultaneous linear equations

PROJECT MATHS
Text & Tests 6

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1. Solving simultaneous linear equations with two variables

Example 1

Solve the equations $3x - y = 1$ and $x - 2y = -8$.Elimination
method $-2 \times$
 (1)
 (2)

$$\begin{array}{r} 3x - y = 1 \quad (1) \\ x - 2y = -8 \quad (2) \end{array}$$

$$\begin{array}{r} -6x + 2y = -2 \\ +x - 2y = -8 \\ \hline -5x \quad = -10 \\ \underline{-5} \quad \quad \underline{-5} \end{array}$$

$$x = 2$$

Sub in \rightarrow (1)

$$3(2) - y = 1$$

$$6 - y = 1$$

$$5 = y$$

pt (2, 5)

1. Solving simultaneous linear equations with two variables

Example 1Solve the equations $3x - y = 1$ and $x - 2y = -8$.

substitution method

① $y = ?$

③ \rightarrow ②

\rightarrow ③

$$\begin{aligned} 3x - y &= 1 & \textcircled{1} \\ x - 2y &= -8 & \textcircled{2} \end{aligned}$$

$$\begin{aligned} -y &= 1 - 3x \\ y &= -1 + 3x \\ y &= 3x - 1 & \textcircled{3} \end{aligned}$$

$$\begin{aligned} x - 2(3x - 1) &= -8 \\ x - 6x + 2 &= -8 \\ -5x &= -10 \\ x &= 2 \end{aligned}$$

$$y = 3(2) - 1 = 6 - 1$$

$$y = 5$$