

MATH1040/7040 SIMULTANEOUS EQUATIONS

1. (1) Solve

$$\begin{aligned} -3y + 5x &= -2 \\ 9y - 10x &= 1 \end{aligned}$$

(2) Solve

$$\begin{aligned} 6x &= -42y + 60 \\ -5y + 350 &= -10x \end{aligned}$$

(3) Do the lines $10y - 3x = 120$ and $2y + 10x = -82$ intersect? If so, find the point of intersection.

(4) Do the lines $66 + 3x = 2y$ and $-6x = -12y + 60$ intersect? If so, find the point of intersection.

2. (1) Solve

$$\begin{aligned} -5y - 8x &= -74 \\ 25y + 40x &= 389 \end{aligned}$$

(2) Solve

$$\begin{aligned} -2x &= 9y - 5 \\ 0 &= 10x + 20 + 90y \end{aligned}$$

(3) Do the lines $-7y + 4x = -61$ and $2y - 4x = 46$ intersect? If so, find the point of intersection.

(4) Do the lines $0 = -27x - 3y - 3$ and $0 = 7y + 504 - 8x$ intersect? If so, find the point of intersection.

3. (1) Solve

$$\begin{aligned} -4y + 4x &= 28 \\ 14y + 9x &= -6 \end{aligned}$$

(2) Solve

$$\begin{aligned} -6x - 10y &= 116 \\ 56 + 7y &= 21x \end{aligned}$$

(3) Do the lines $4y + 9x = 63$ and $6y + 7x = 75$ intersect? If so, find the point of intersection.

(4) Do the lines $0 = -10y - 80 + 60x$ and $48 + 6y = 36x$ intersect? If so, find the point of intersection.

4. (1) Solve

$$\begin{aligned} -6y - 9x &= 36 \\ -2y - 3x &= 12 \end{aligned}$$

(2) Solve

$$\begin{aligned} -72y &= 16 + 8x \\ -90y - 10x &= 20 \end{aligned}$$

(3) Do the lines $3y - 2x = -4$ and $5y + 10x = 60$ intersect? If so, find the point of intersection.

(4) Do the lines $-10y - 3x = -36$ and $81y = -9x - 45$ intersect? If so, find the point of intersection.

5. (1) Solve

$$-2y - 9x = 55$$

$$8y - 4x = 60$$

(2) Solve

$$9x = 30 - 3y$$

$$50 = -10y - 5x$$

(3) Do the lines $5x - 8y = -37$ and $-8x - 8y = -24$ intersect? If so, find the point of intersection.

(4) Do the lines $-32 = -4y - 24x$ and $-40 = -30x - 5y$ intersect? If so, find the point of intersection.