Identifying Point of Intersection with Equations

For each system of equations determine the point of intersection in a graph.

1) \( \begin{align*} y &= 0.25x + 5 \\ y &= 2.5x - 4 \end{align*} \)

2) \( \begin{align*} y &= 2.5x + 7 \\ y &= -1.5x - 9 \end{align*} \)

3) \( \begin{align*} y &= 0.2x + 3 \\ y &= 1.8x - 5 \end{align*} \)

4) \( \begin{align*} y &= 0.4x + 4 \\ y &= 0.6x + 5 \end{align*} \)

5) \( \begin{align*} y &= 1.5x + 2 \\ y &= 4.25x - 9 \end{align*} \)

6) \( \begin{align*} y &= 0.25x - 9 \\ y &= 3.75x + 5 \end{align*} \)

7) \( \begin{align*} y &= 1.8x + 3 \\ y &= 0.6x - 3 \end{align*} \)

8) \( \begin{align*} y &= 1.5x + 8 \\ y &= -0.5x + 0 \end{align*} \)

9) \( \begin{align*} y &= 1.5x + 7 \\ y &= -0.5x - 9 \end{align*} \)

10) \( \begin{align*} y &= -1.25x + 5 \\ y &= -1.75x + 3 \end{align*} \)

Answers

1. (4, 6)

2. (-4, -3)

3. (5, 4)

4. (-5, 2)

5. (4, 8)

6. (-4, -10)

7. (-5, -6)

8. (-4, 2)

9. (-8, -5)

10. (-4, 10)
For each system of equations determine the point of intersection in a graph.

1) \[ \begin{align*}
    y &= 0.25x + 5 \\
    y &= 2.5x - 4
\end{align*} \]
\[0.25x + 5 &= 2.5x - 4 \]
\[-2.25x &= -9 \]
\[x = 4 \]
\[y = (0.25 \times 4) + 5 \]
\[y = (2.5 \times 4) - 4 \]

2) \[ \begin{align*}
    y &= 2.5x + 7 \\
    y &= -1.5x - 9
\end{align*} \]
\[2.5x + 7 &= -1.5x - 9 \]
\[4x = -16 \]
\[x = -4 \]
\[y = (2.5 \times -4) + 7 \]
\[y = (-1.5 \times -4) - 9 \]

3) \[ \begin{align*}
    y &= 0.2x + 3 \\
    y &= 1.8x - 5
\end{align*} \]
\[0.2x + 3 &= 1.8x - 5 \]
\[-1.6x &= -8 \]
\[x = 5 \]
\[y = (0.2 \times 5) + 3 \]
\[y = (1.8 \times 5) - 5 \]

4) \[ \begin{align*}
    y &= 0.4x + 4 \\
    y &= 0.6x + 5
\end{align*} \]
\[0.4x + 4 &= 0.6x + 5 \]
\[-0.2x &= 1 \]
\[x = -5 \]
\[y = (0.4 \times -5) + 4 \]
\[y = (0.6 \times -5) + 5 \]

5) \[ \begin{align*}
    y &= 1.5x + 2 \\
    y &= 4.25x - 9
\end{align*} \]
\[1.5x + 2 &= 4.25x - 9 \]
\[-2.75x &= -11 \]
\[x = 4 \]
\[y = (1.5 \times 4) + 2 \]
\[y = (4.25 \times 4) - 9 \]

6) \[ \begin{align*}
    y &= 0.25x - 9 \\
    y &= 3.75x + 5
\end{align*} \]
\[0.25x - 9 &= 3.75x + 5 \]
\[-3.5x &= 14 \]
\[x = -4 \]
\[y = (0.25 \times -4) - 9 \]
\[y = (3.75 \times -4) + 5 \]

7) \[ \begin{align*}
    y &= 1.8x + 3 \\
    y &= 0.6x - 3
\end{align*} \]
\[1.8x + 3 &= 0.6x - 3 \]
\[1.2x &= -6 \]
\[x = -5 \]
\[y = (1.8 \times -5) + 3 \]
\[y = (0.6 \times -5) - 3 \]

8) \[ \begin{align*}
    y &= 1.5x + 8 \\
    y &= -0.5x + 0
\end{align*} \]
\[1.5x + 8 &= -0.5x + 0 \]
\[2x &= -8 \]
\[x = -4 \]
\[y = (1.5 \times -4) + 8 \]
\[y = (-0.5 \times -4) + 0 \]

9) \[ \begin{align*}
    y &= 1.5x + 7 \\
    y &= -0.5x - 9
\end{align*} \]
\[1.5x + 7 &= -0.5x - 9 \]
\[2x &= -16 \]
\[x = -8 \]
\[y = (1.5 \times -8) + 7 \]
\[y = (-0.5 \times -8) - 9 \]

10) \[ \begin{align*}
    y &= -1.25x + 5 \\
    y &= -1.75x + 3
\end{align*} \]
\[-1.25x + 5 &= -1.75x + 3 \]
\[0.5x &= -2 \]
\[x = -4 \]
\[y = (-1.25 \times -4) + 5 \]
\[y = (-1.75 \times -4) + 3 \]