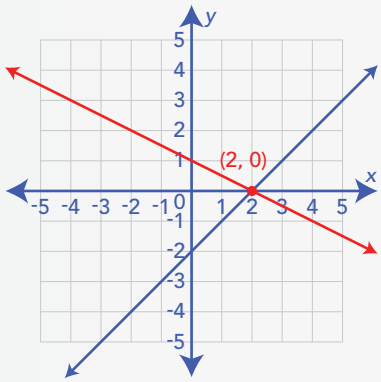
Identify Systems of Equations in Graphs

Example

Tell whether the graph shows the system of equations.

$x + 2y = 2$
$x - y = 2$



You can find the x- and y-intercepts for $x + 2y = 2$.
Substitute $y = 0$:
$x + 2(0) = 2$
$x = 2$, so the x-intercept is (2, 0).
Substitute $x = 0$:
$0 + 2y = 2$
$y = 1$, so the y-intercept is (0, 1).
These points are on one of the lines in the graph.

You can find the x- and y-intercepts for $x - y = 2$.
Substitute $y = 0$:
$x - 0 = 2$
$x = 2$, so the x-intercept is (2, 0).
Substitute $x = 0$:
$0 - y = 2$
$y = -2$, so the y-intercept is (0, −2).
These points are on the other line.
So **the graph shows the system of equations**.

For 1–12, look at the system of equations and match to a graph.

1 $y = -8x + 3$
$y = -x - 4$

2 $4x + 2y = 2$
$2x - y = 7$

3 $2y = 2x$
$6y = 5x$

4 $y = 2x + 2$
$y = x - 2$

5 $y = 3x + 3$
$x = y + 3$

6 $8y - x = 9$
$4y = 3x + 2$

7 $x = 4 + y$
$4y = x - 1$

8 $x + 2y = 0$
$x + 6y = 0$

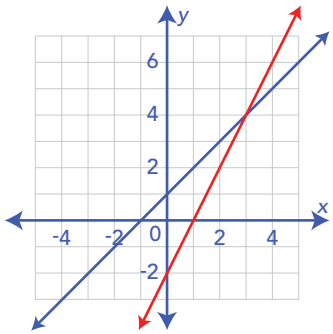
9 $2y = 5x - 5$
$2x = -5y + 2$

10 $x - 6y = 8$
$x + 6y = 8$

11 $x = 3 + y$
$2y = x - 1$

12 $2x = y + 2$
$2y = 2x + 2$

A



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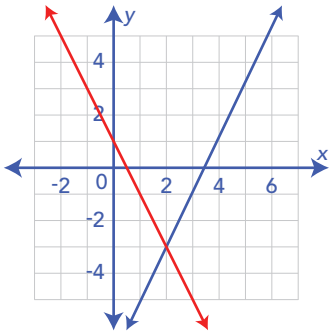
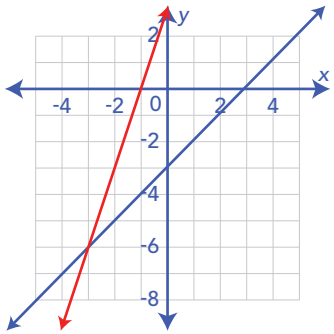
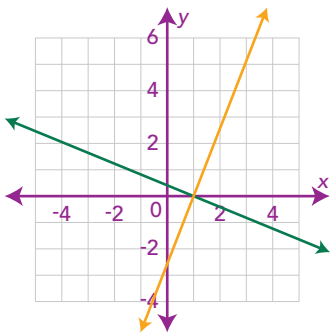


C



D



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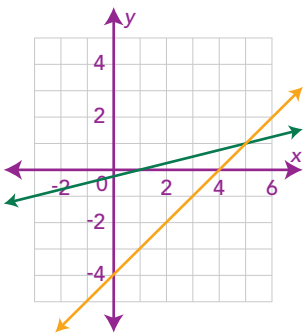

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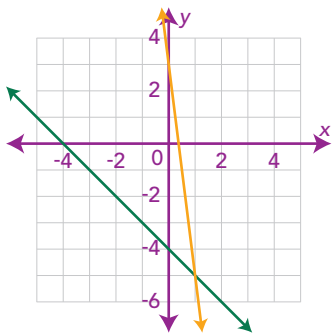

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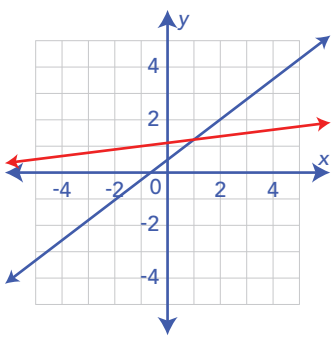
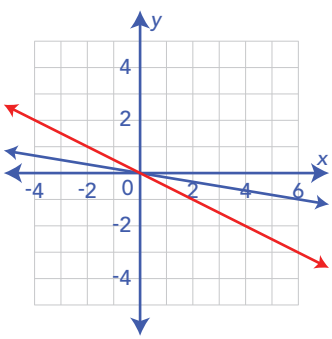
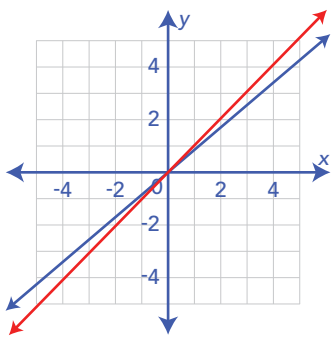


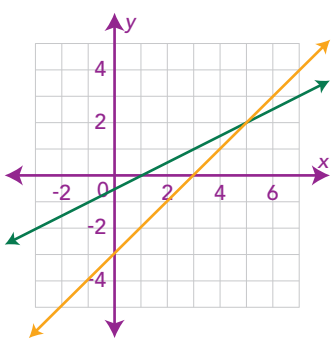
H



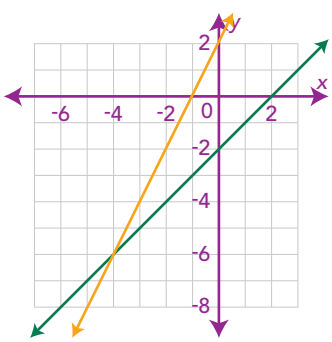
I



J



K



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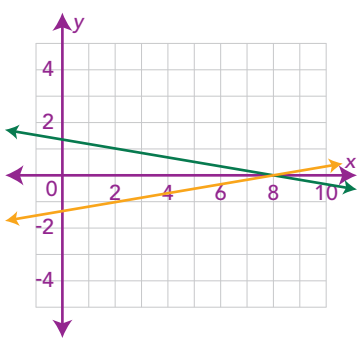

Objective: Identify the graph of a system of equations.