4.4: Matching Equations and Graphs
Worksheet

1. Match each equation with a graph on this grid.

a) $y = 2x - 1$ C   **b)** $y = -x + 4$ A   **c)** $y = 3x - 3$ B

$\boxed{X=0}$ $y = 2x - 1$
$= 2(0) - 1$
$= 0 - 1$
$= -1$ $(0, -1)$

$\boxed{X=0}$ $y = -x + 4$
$= 0 + 4$
$= 4$ $(0, 4)$

$\boxed{X=0}$ $y = 3x - 3$
$= 3(0) - 3$
$= 0 - 3$
$(0, -3) = -3$
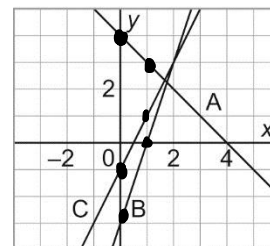
$\boxed{X=1}$ $y = 2x - 1$
$= 2(1) - 1$
$= 2 - 1$
$= 1$ $(1, 1)$

$\boxed{X=1}$ $y = -x + 4$
$= -(1) + 4$
$= -1 + 4$
$(1, 3) = 3$

$\boxed{X=1}$ $y = 3x - 3$
$= 3(1) - 3$
$(1, 0) = 3 - 3$
$= 0$

2. Match each equation with a graph on this grid.

a) $y = -1$ **b)** $0 = -x + 1$ **c)** $2 = 2x - 3$

C

$\boxed{-1}$

$\dfrac{-1}{-1} = \dfrac{-x}{-1}$

$\boxed{x = 1}$

A

$2 = 2x - 3$
$+3 \qquad +3$
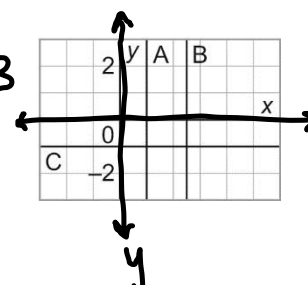
$\dfrac{5}{2} = \dfrac{2x}{2}$

$\boxed{x = 2.5}$

B

3. Match each equation with a graph on this grid. Justify your answers.

a) $x + y = 5$ C   **b)** $x - y = 5$ B   **c)** $x + y = -5$ A

$\boxed{X=2}$ $x + y = 5$
$2 + y = 5$
$-2 \qquad -2$
$(2, 3)$ $y = 3$

$\boxed{X=2}$ $2 - y = 5$
$-2 \qquad -2$
$-y = 3$
$\dfrac{-y}{-1} = \dfrac{3}{-1}$
$(2, -3)$ $y = -3$

$\boxed{X=-3}$ $x + y = -5$
$-3 + y = -5$ $(-3, 2)$
$+3 \qquad +3$
$y = -2$
$(-3, 2)$

$\boxed{X=3}$ $x + y = 5$
$3 + y = 5$
$-3 \qquad -3$
$(3, 2)$ $y = 2$

$\boxed{X=1}$ $x - y = 5$
$1 - y = 5$
$-1 \qquad -1$
$(1, -4)$ $\dfrac{-y}{-1} = \dfrac{4}{-1}$

$\boxed{y = -4}$
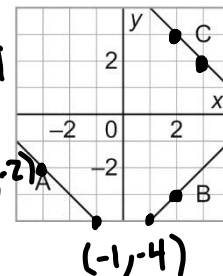
$\boxed{X=-1}$ $x + y = -5$
$-1 + y = -5$
$+1 \qquad +1$
$(-1, -4)$ $y = -4$

4. Which equation describes this graph? Justify your answers.

a) $y = x + 2$

b) $y = -x + 2$

c) $y = x - 2$

x,y
$(1,3)$

$y = x + 2$

$3 \overset{?}{=} 1 + 2$

$3 = 3 \checkmark$

So check the second point.

x,y
$(-2,0)$ $y = x + 2$

$0 \overset{?}{=} -2 + 2$
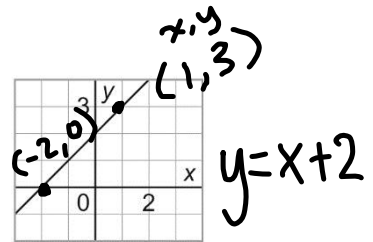
$0 = 0 \checkmark$

So the equation matches the graph.

$(1,3)$

$y = x - 2$

$3 \overset{?}{=} 1 - 2$

$3 \neq -1$, this equation does not match our graph.

x,y
$(1,3)$

$(-2,0)$

$y = x + 2$

5. Which equation describes this graph? Justify your answers.

a) $x - y = 4$

x,y
$(4,0)$ $x - y = 4$
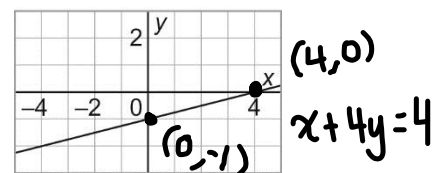
$4 - 0 \overset{?}{=} 4$

$4 = 4 \checkmark$

now check a second point.

x,y
$(0,-1)$ $x - y = 4$

$0 - (-1) \overset{?}{=} 4$

$1 \neq 4$

This equation does not match the graph.

b) $x - 4y = 4$

x,y
$(4,0)$ $x - 4y = 4$

$4 - 4(0) \overset{?}{=} 4$

$4 - 0 \overset{?}{=} 4$

$4 = 4$

now check a second point.

x,y
$(0,-1)$ $x - 4y \overset{?}{=} 4$

$0 - 4(-1) \overset{?}{=} 4$

$0 - (-4) \overset{?}{=} 4$

$4 = 4 \checkmark$

So this equation matches the graph.

c) $4x - y = 1$

$(4,0)$
$(0,-1)$
$x + 4y = 4$