Graphs of Addition and Subtraction

Coordinates and Equations

Tick the boxes where the coordinates lie on the lines

Equation	$(5, 7)$	$(-5, -2)$	$(9.5, 2.5)$	$(5, -2)$	$(-0.5, 9.5)$
$x = 5$					
$y = -2$					
$y = x + 2$					
$y = x - 7$					
$x + y = 9$					
$y - x = 2$					
$y = 12 - x$					

For each set of coordinates, find an equation to describe the relationship between the x-values and y-values.

Equation	**Coordinates**
	$(5,7)$, $(24,26)$, $(-8,-6)$, $(-2,0)$
	$(5,6)$, $(2,9)$, $(9,2)$, $(-5,16)$
	$(-3,-15)$, $(4,-8)$, $(116,104)$, $(-12,-24)$
	$(8,-13)$, $(20,-25)$, $(-6,1)$, $(-14,9)$
	$(-0.34,-0.66)$, $(0.375,-1.375)$, $(-2.864,1.864)$

Addition

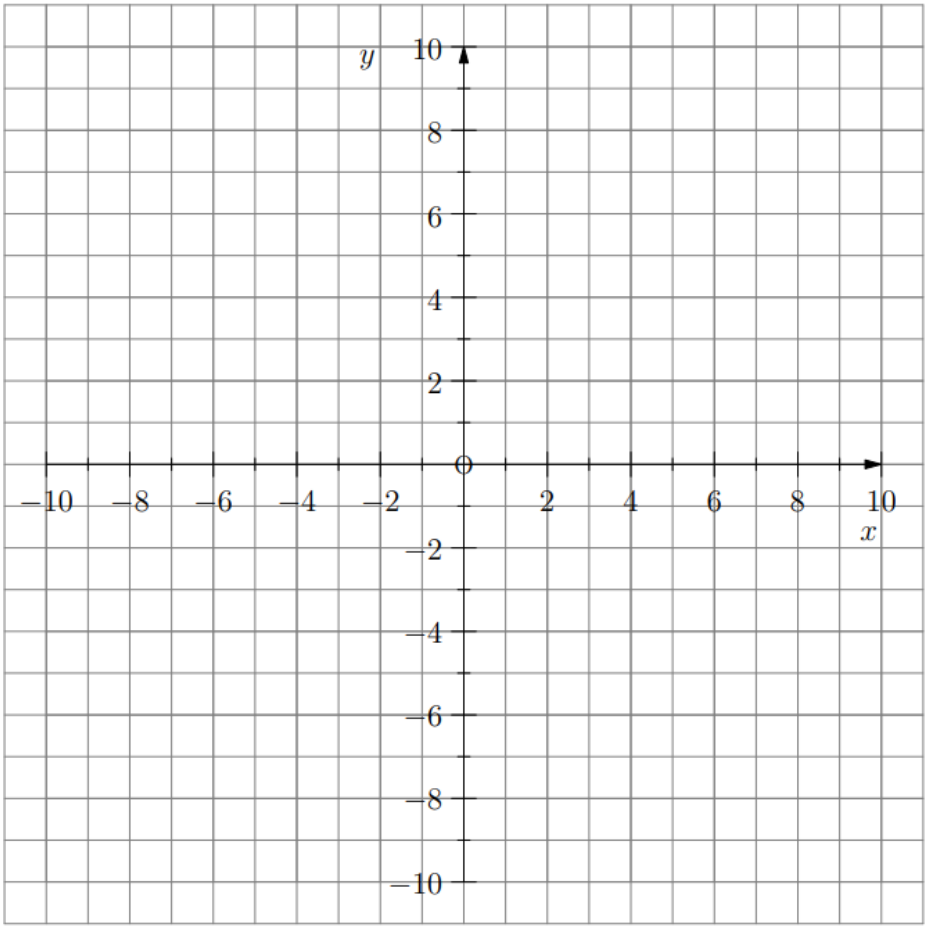
1. Find 5 coordinates that obey each of the following equations.

   a. $y = x + 4$

   b. $y = x + 1.5$

   c. $y = x - 3$

2. Plot the coordinates for each equation and show **all** coordinates that obey each equation.



3. What do you notice about the 3 lines?

4. Match pairs of equations that describe the same line. Write down an equivalent equation for the odd one out

$y = x$	$y = 4 + x$	$y = x - 5$
$y = x + 5$	$x = y + 4$	$x = y - 4$
$y - x = 5$	$x = y + 5$	$x - y = 0$

Subtraction

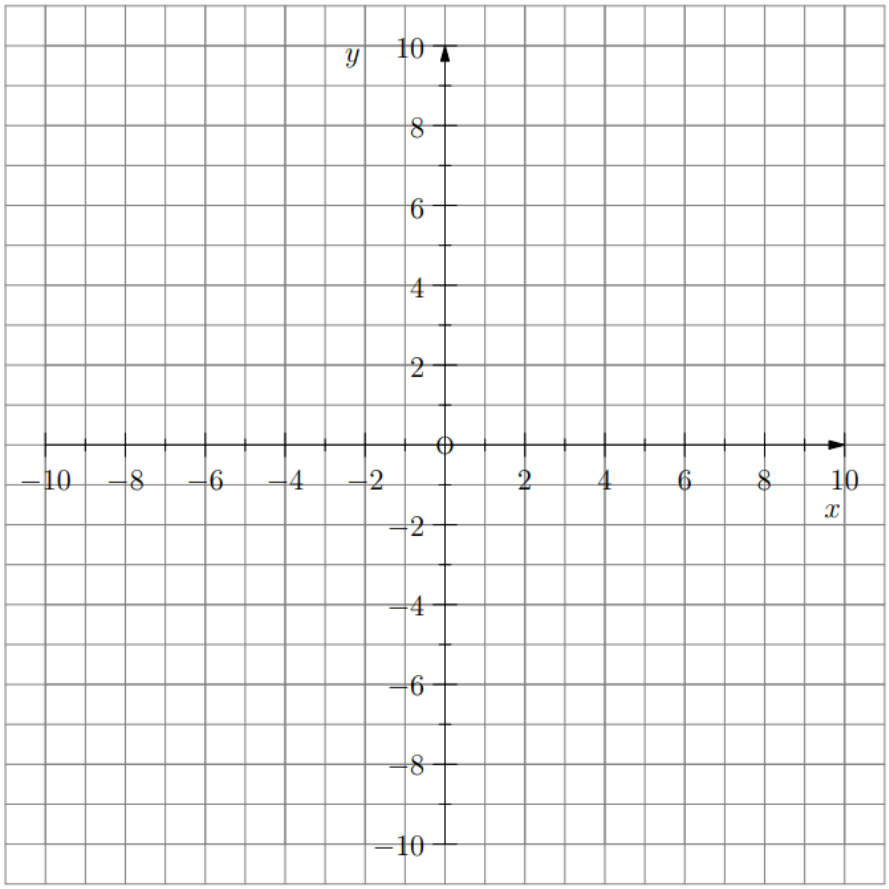
1. Find 5 coordinates that obey each of the following equations.

   a. $y = 9 - x$

   b. $y = 2.5 - x$

   c. $y = 4 - x$

2. Plot the coordinates for each equation and show **all** coordinates that obey each equation.



3. Match pairs of equations that describe the same line. Write down an equivalent equation for the odd one out

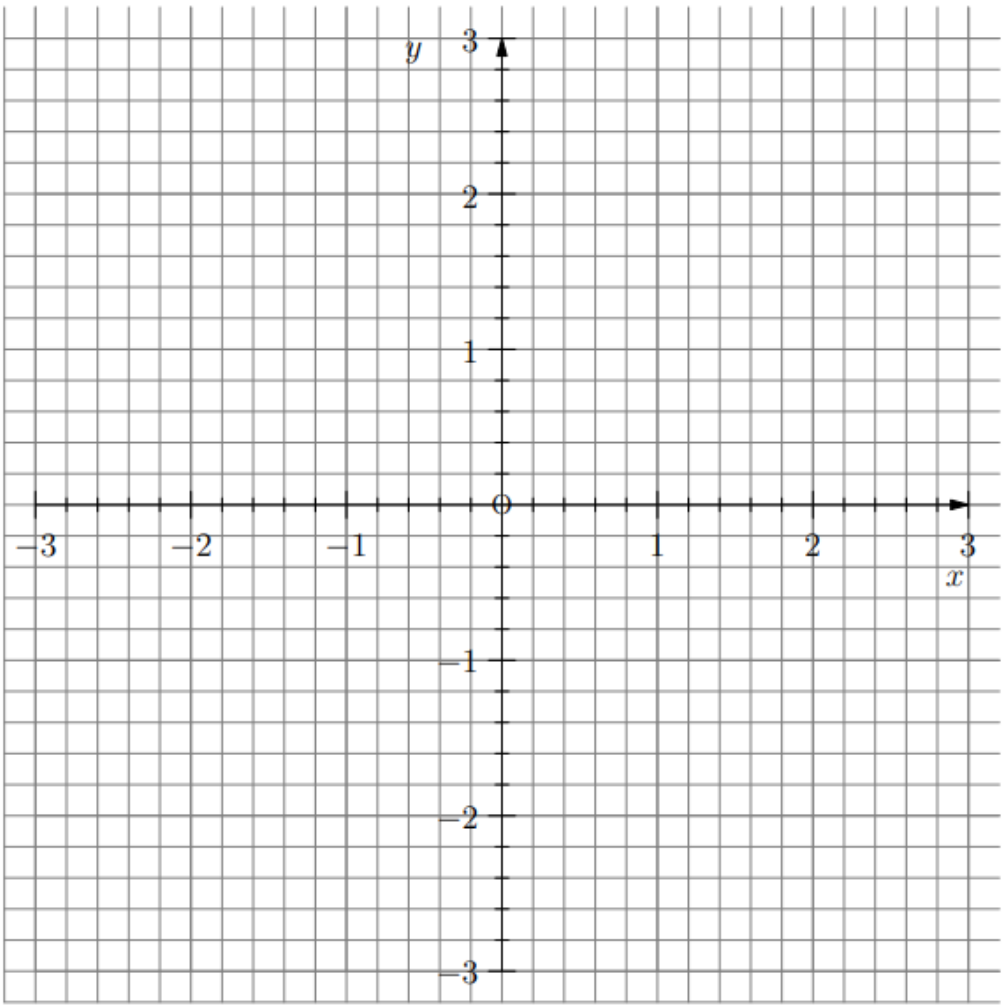
$y = x - 8$	$y = x + 8$	$y = -x$
$y = -8 - x$	$x = y + 8$	$y = 8 - x$
$x + y = 0$	$x + y = 8$	$x + y = -8$

Combined

1. Draw the following graphs on the same axes.
   a. $x + y = 1.2$

   b. $y = x + 2.1$

   c. $y = 1.2 - x$



2. What do you notice about the graphs? Can you explain why this has happened?

3. Write down the equation of each graph shown on the grid.