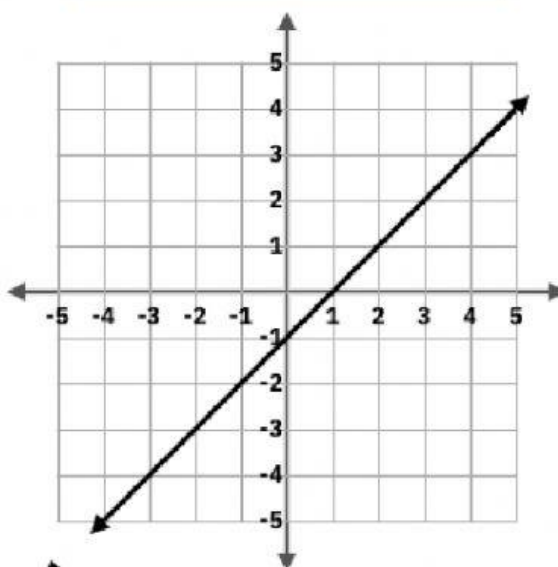
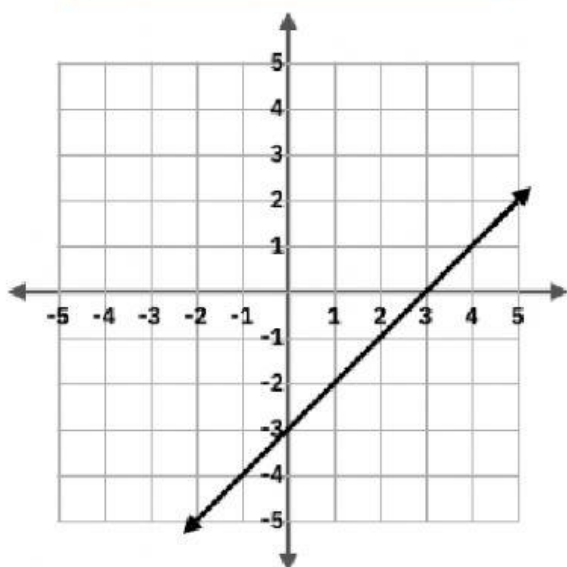
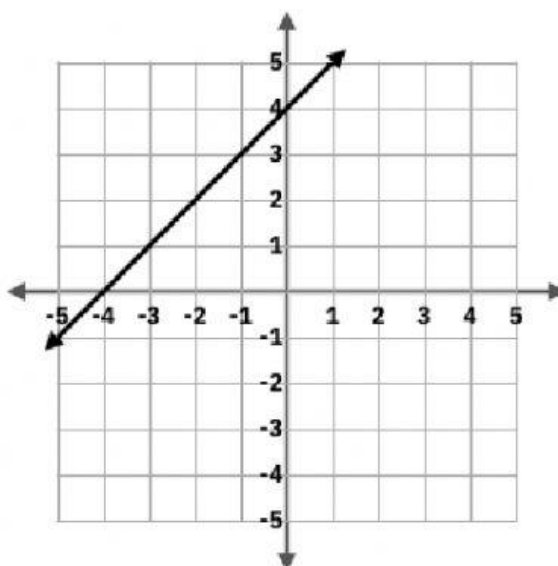
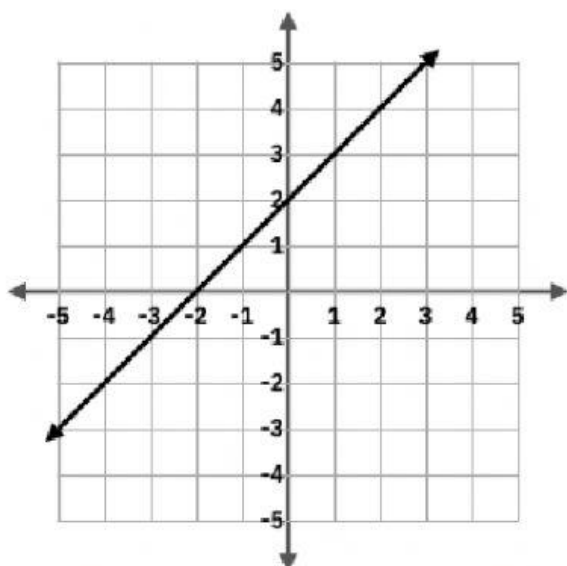


Straight Lines graphs

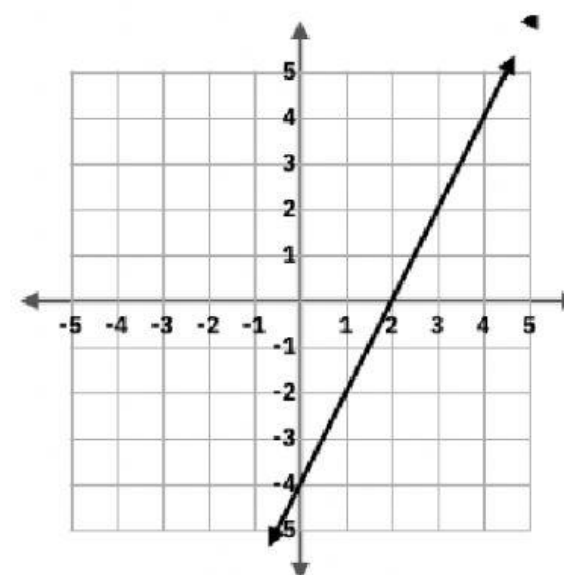
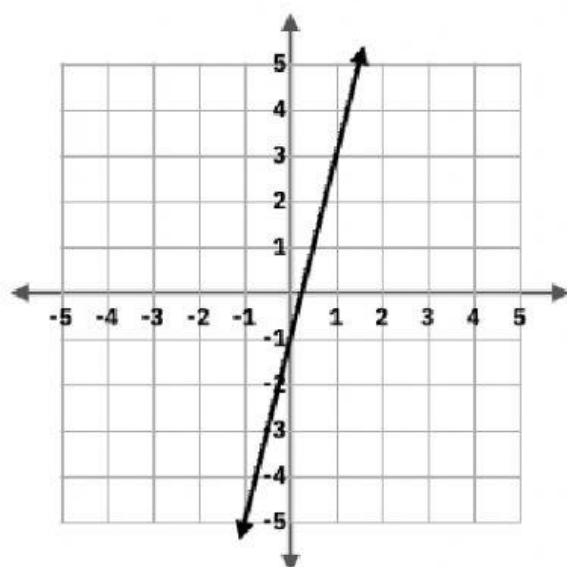
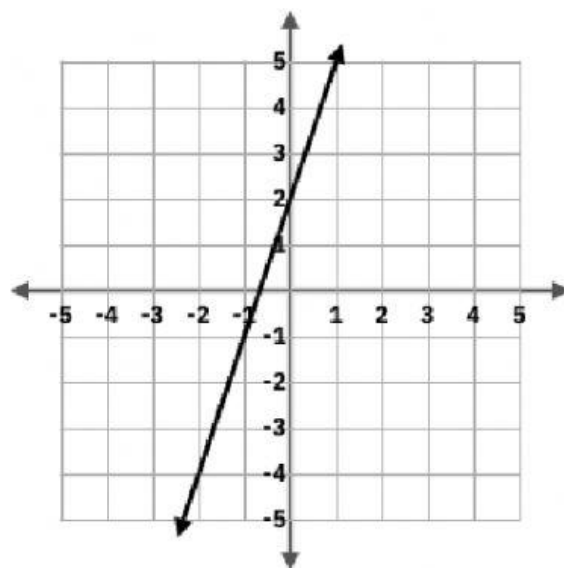
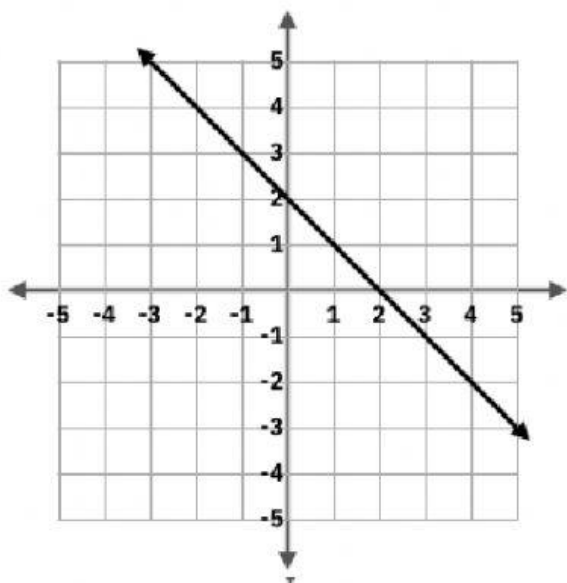
Directions to find the equation of the line: $y = mx + c$

- To find the gradient (m) of the slope we use the formula $\text{rise} \div \text{run}$
- To find the intercept (c) we look where the lines crosses the y axis

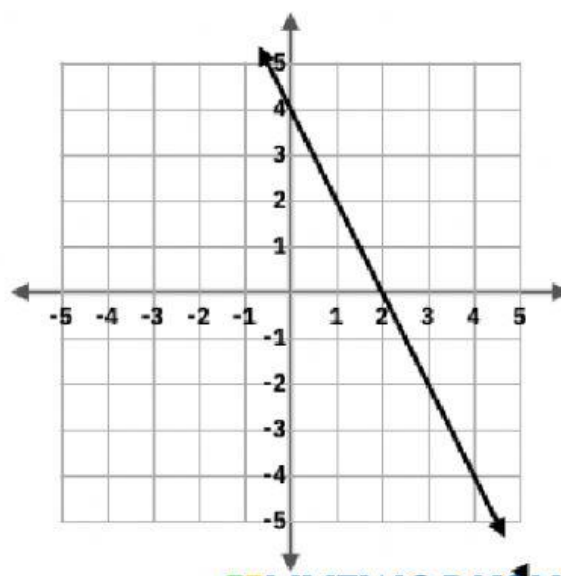
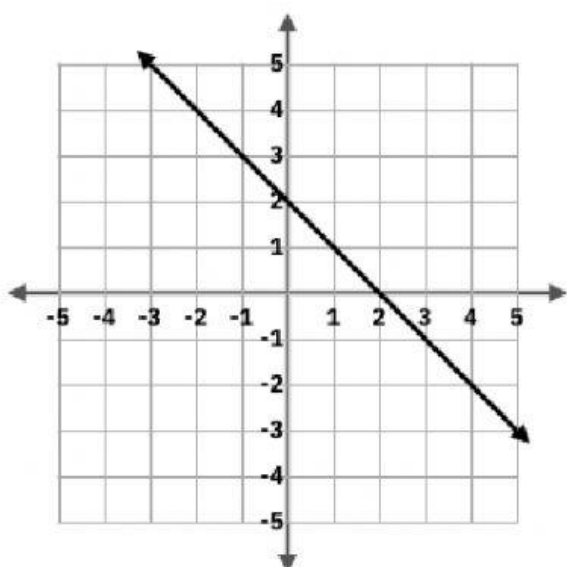
Find the equation of the line for each of the following graphs:



Stage 2 - different gradients - write your answers underneath the graph



Stage 3 - negative gradients



Drawing graphs - We need to be able to plot straight line graphs.

For example $y = x + 2$

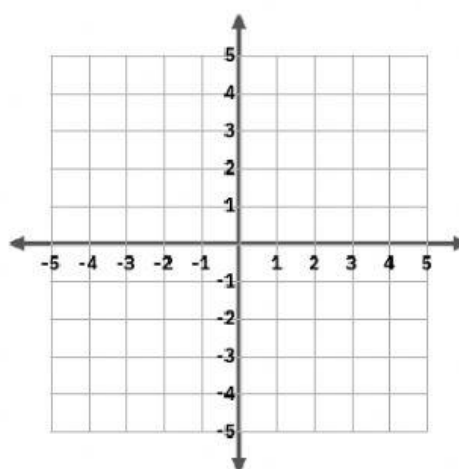
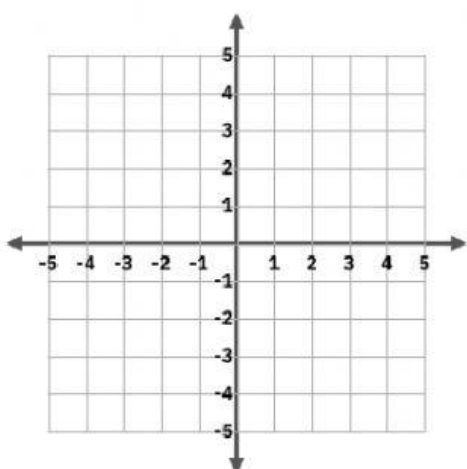
This means the y coordinate is equal to whatever the x coordinate is plus 2 more.

If the x coordinate is 3 then $y = 3 + 2 = 5$. So we would plot the coordinate (3,5)

1) $y = x + 1$

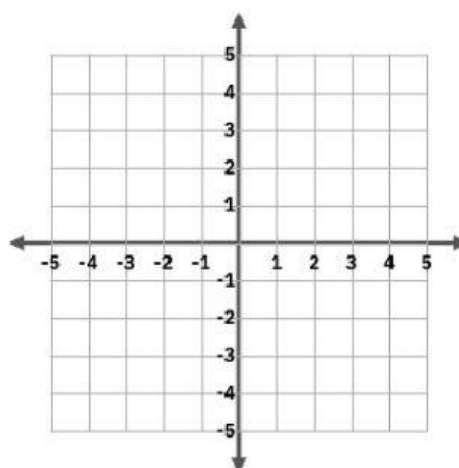
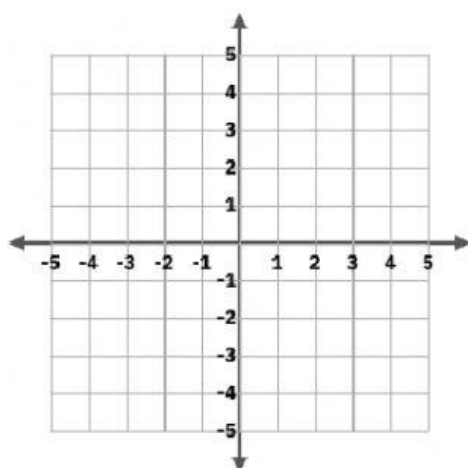
x	-1	0	1	2
y				

2) $y = x - 1$



3) $y = 2x + 2$

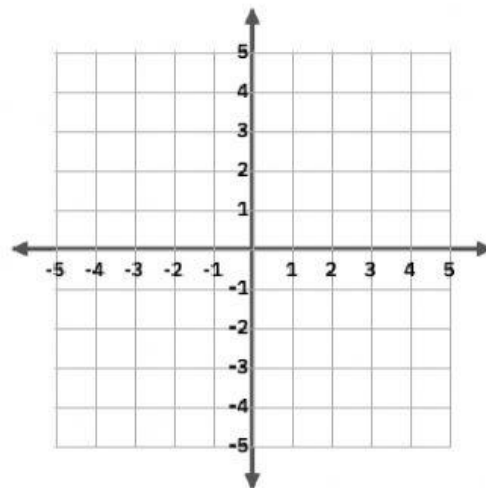
4) $y = 3x - 1$



Challenge question

Draw the graph of $y = x^2 + 2x + 3$

x	-1	0	1
x^2			
$+2x$			
$+3$			
y=			



When given the equation of the line we can pick out the gradient (m) and the intercept (c - where the line crosses the y axis). The line should always follow the pattern $y = mx + c$. If it does not follow this pattern we need to rearrange the equation until it does.

Easy

$$y = 4x - 5$$

m=

c=

$$y = 3x + 1$$

m=

c=

Medium

$$y = 2x$$

m=

c=

$$y = 2 - 3x$$

m=

c=

Hard

$$2y = 4x + 14$$

m=

c=

$$3y = 2x + 12$$

m=

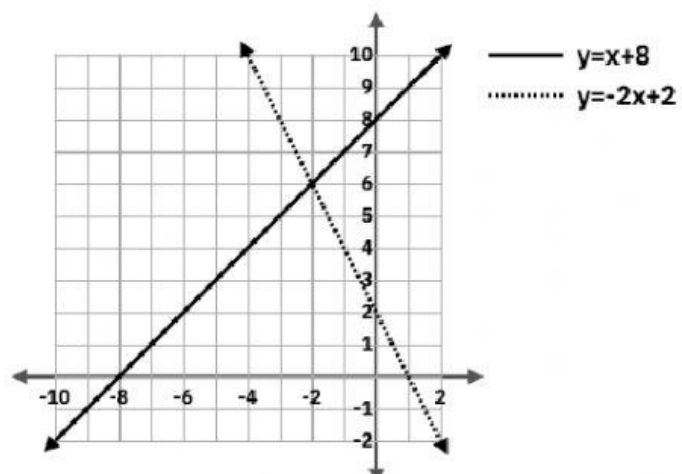
c=

Simultaneous Equations - This is where two straight lines cross each other at a single coordinate. We can solve this using a graph or using algebra

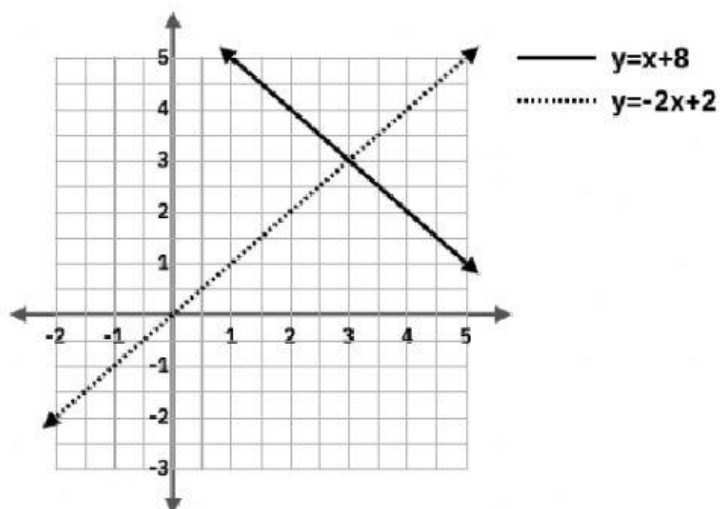
These two lines cross at the Point (____, ____)

x=_____

y=_____



Solve these simultaneous equations graphically



Simultaneous equations using algebra:

- Look to see if either the x or the y values are the same
- If they are look at the sign (+/-) in front of the them
- If the sign is the same i.e. both + or both - then SUBTRACT the equations
- If the signs are different i.e. one - and one + you ADD

Solve the simultaneous equations - same coefficient (letter before y)

1. $4x + 2y = 10$
 $x + 2y = 7$

2. $6x + y = 18$
 $4x + y = 14$

3. $5x - 2y = -23$
 $5x - 6y = -39$

3. $4x + 2y = 10$
 $4x + 8y = 28$

Medium

If the values before x/y are not the same then we need to multiply the one of the equations until they are

$$5x + 2y = 11$$

$$3x - 4y = 4$$

Hard

Sometime we may need to multiply both equations before we can start

$$3x + 5y = 13$$

$$2x + 2y = 6$$