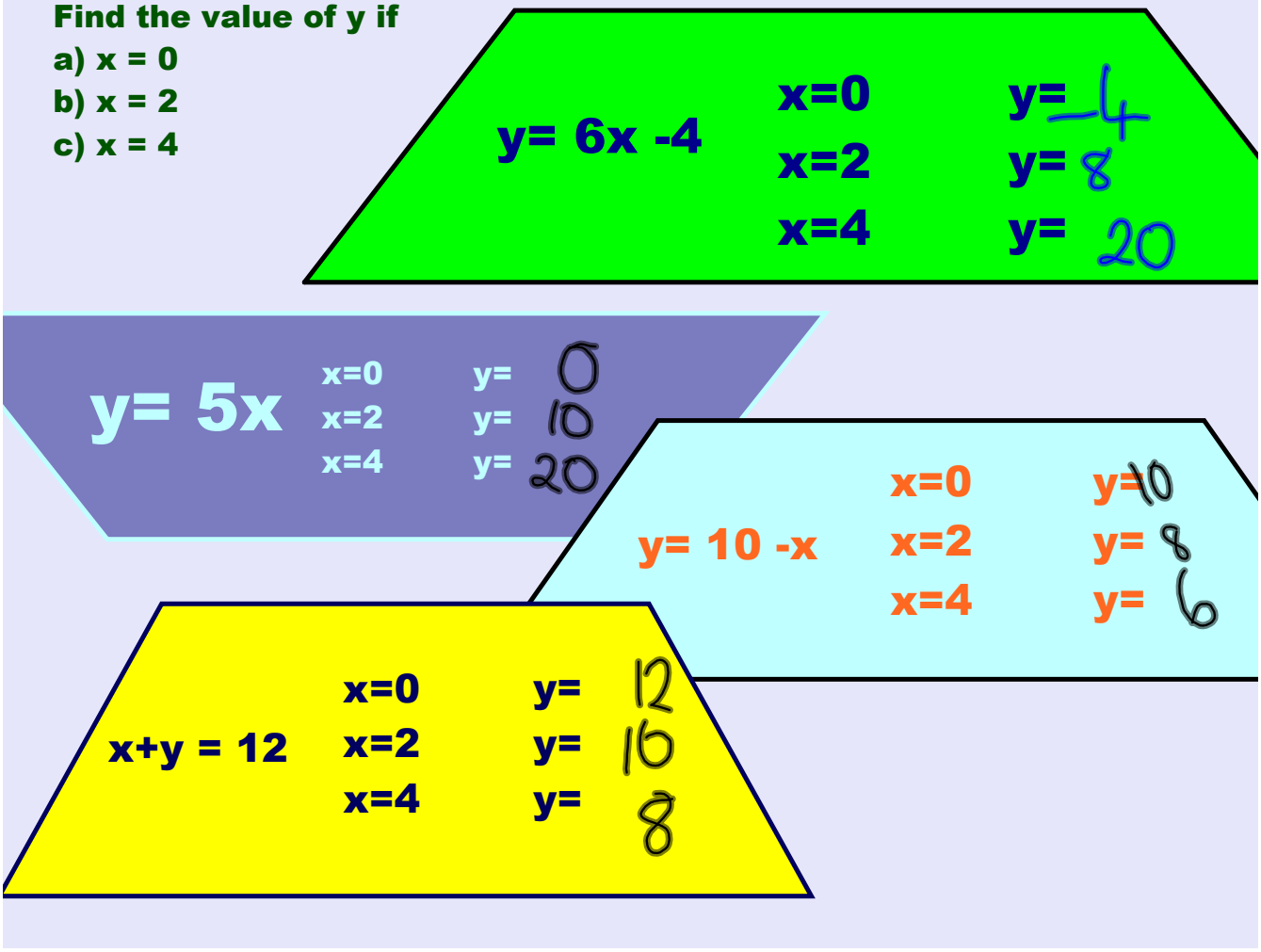
Substituting

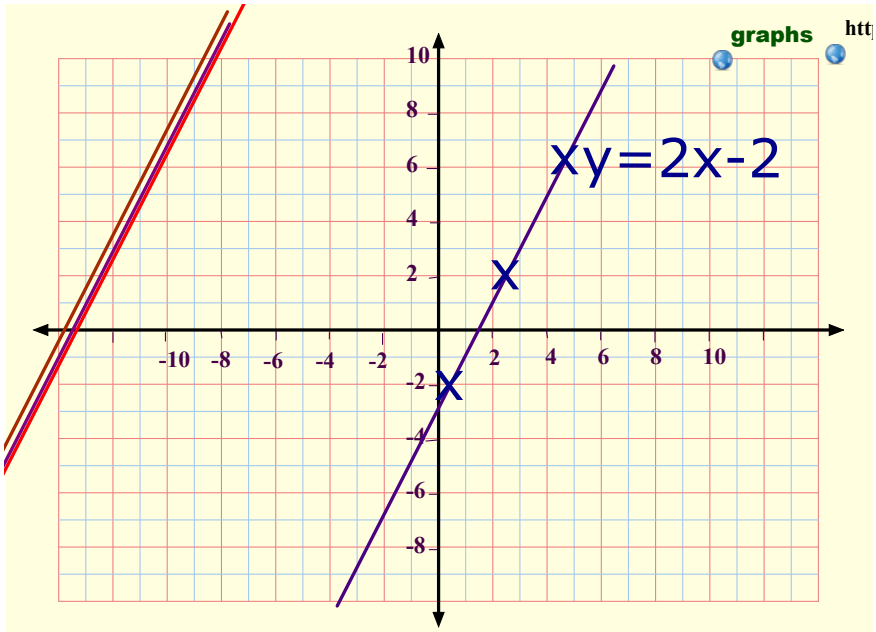
Find the value of y if

a) x = 0

b) x = 2

c) x = 4





Straight line graphs.

You need to be able to

- **draw a graph given the equation**
- **given the graph find the equation**
- **given a pair of co-ordinates and the gradient, draw the graph,**
- **find the gradient**
- **find the y intercept (where it crosses the y axis)**

1. Drawing graphs given the equation.

Firstly , you need to find three pairs of co-ordinates on the line.
x=0, x=2 and x=4 are usually good starting points.

Then plot the points and join them.

Draw the graphs of:

a) y= 2x - 2

x=0 y=
x=2 y=
x=4 y=

b) y = 2x +4

x=0 y=
x=2 y=
x=4 y=

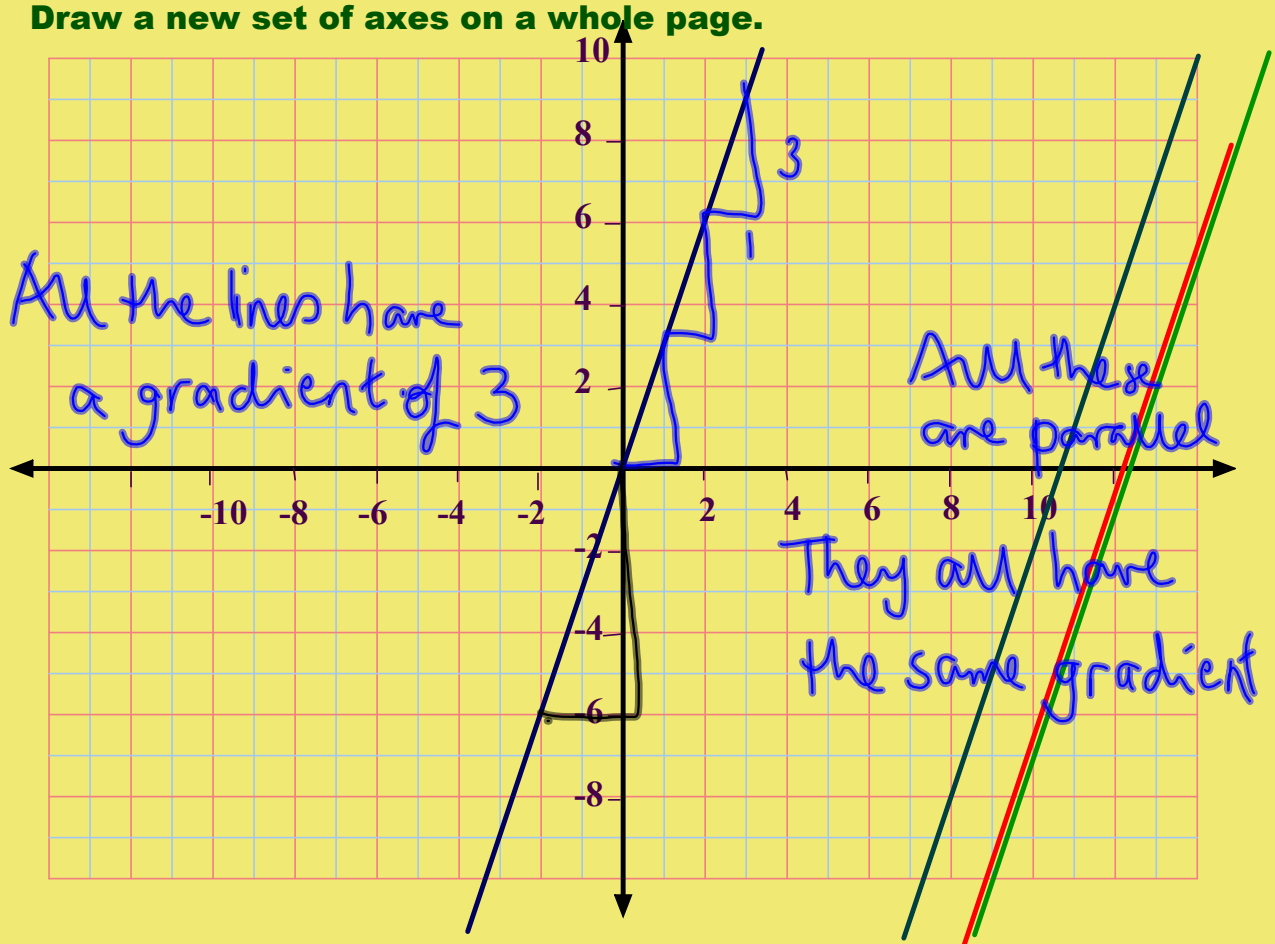
c) y= 2x -6

x=0 y=
x=2 y=
x=4 y=

d) y= 1 + 2x

x=0 y=
x=2 y=
x=4 y=

Draw a new set of axes on a whole page.



Looking at Gradients

Draw the graphs of:

a) y= 3x - 2

x=0 y= -2
x=2 y= 4
x=4 y= 10

b) y = 3x -8

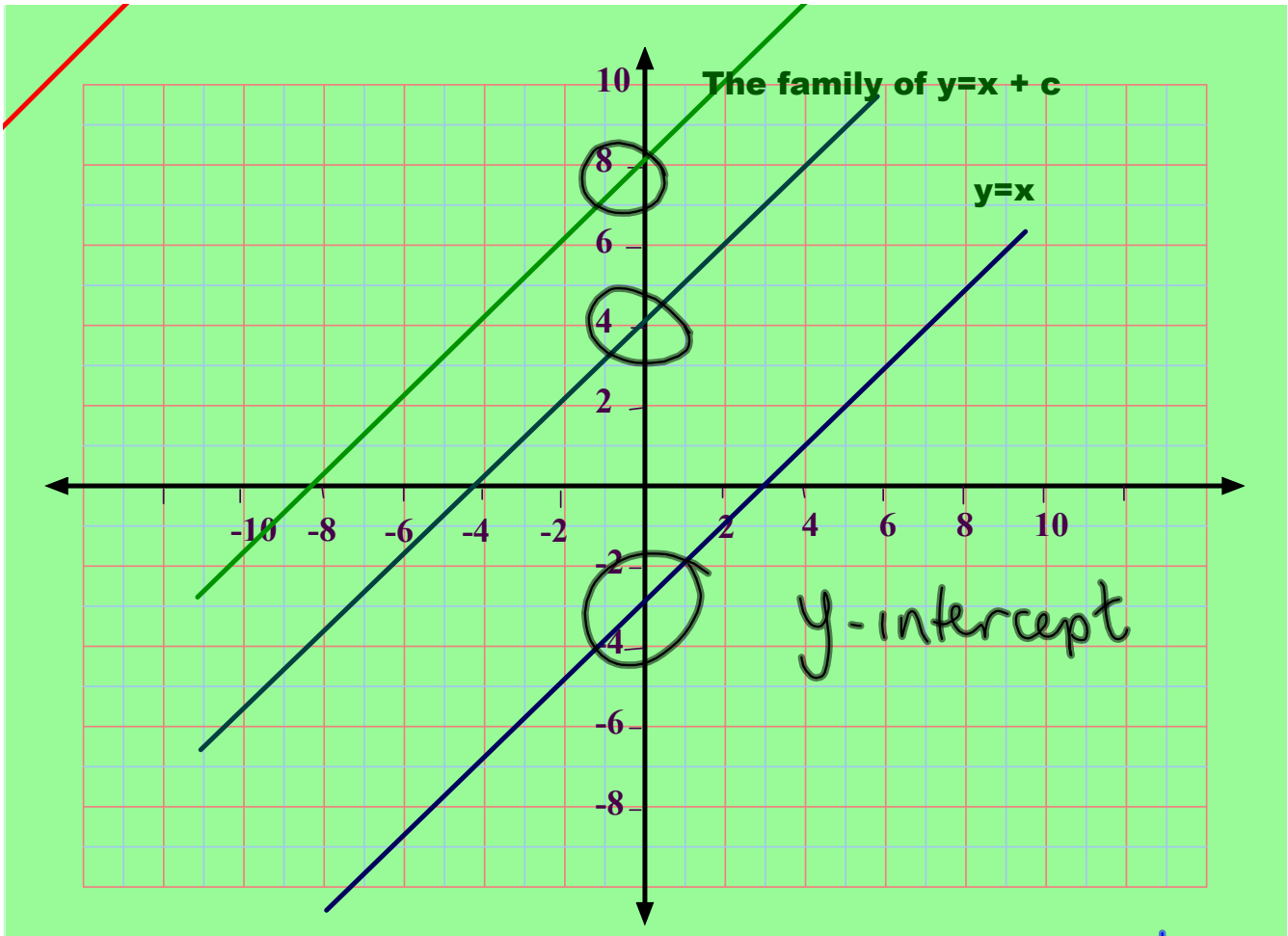
x=0 y= -8
x=2 y= -2
x=4 y= 4

c) y= 3x

x=0 y= 0
x=2 y= 6
x=4 y= 12

d) y= 1 + 3x

x=0 y= 1
x=2 y= 7
x=4 y= 13



The gradient 1
4 is the intercept

$y=x+4$

$y=x-3$

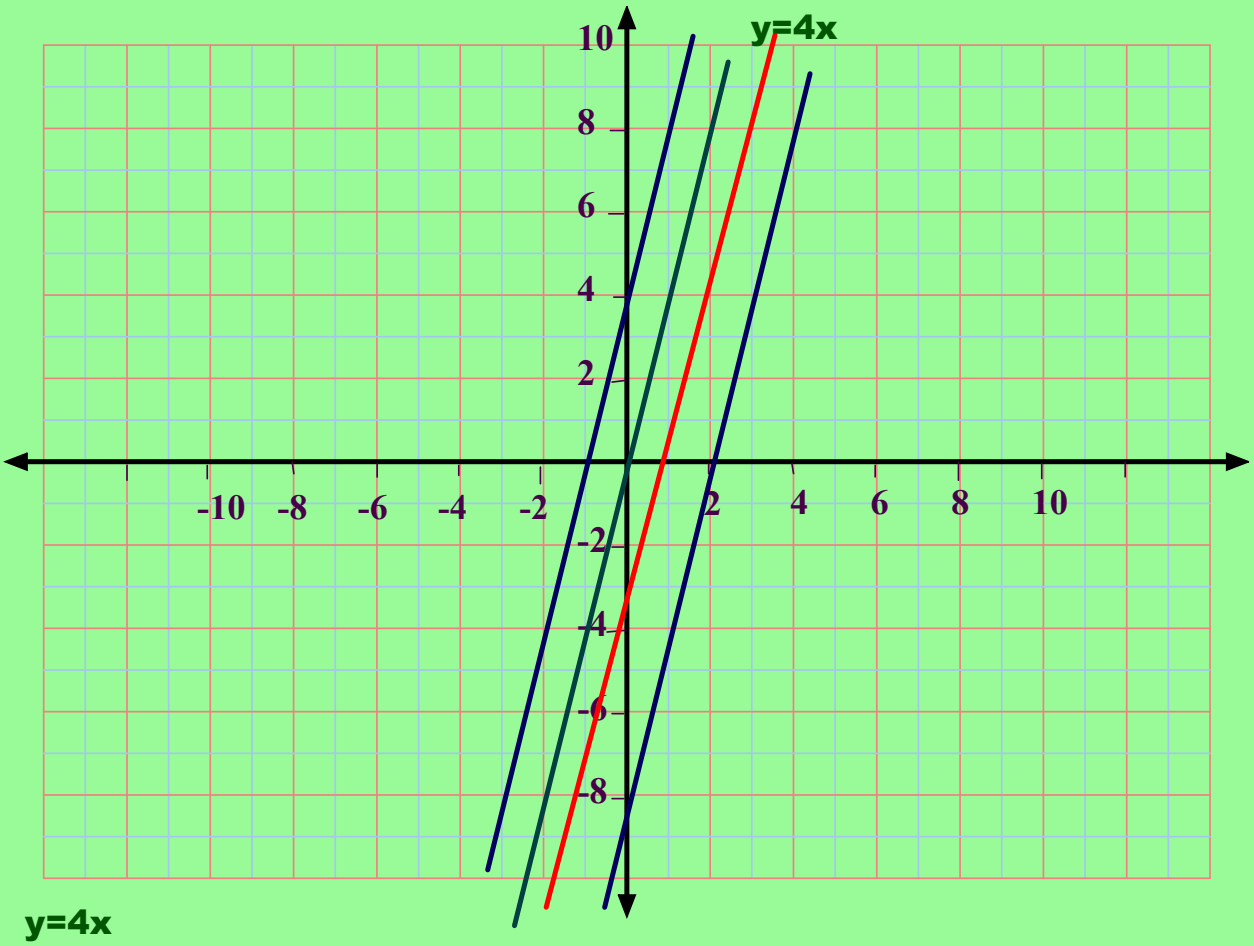
$y=x+8$

The general equation for all straight line graphs is

$y=mx+c$

m is the gradient

c is the y-intercept



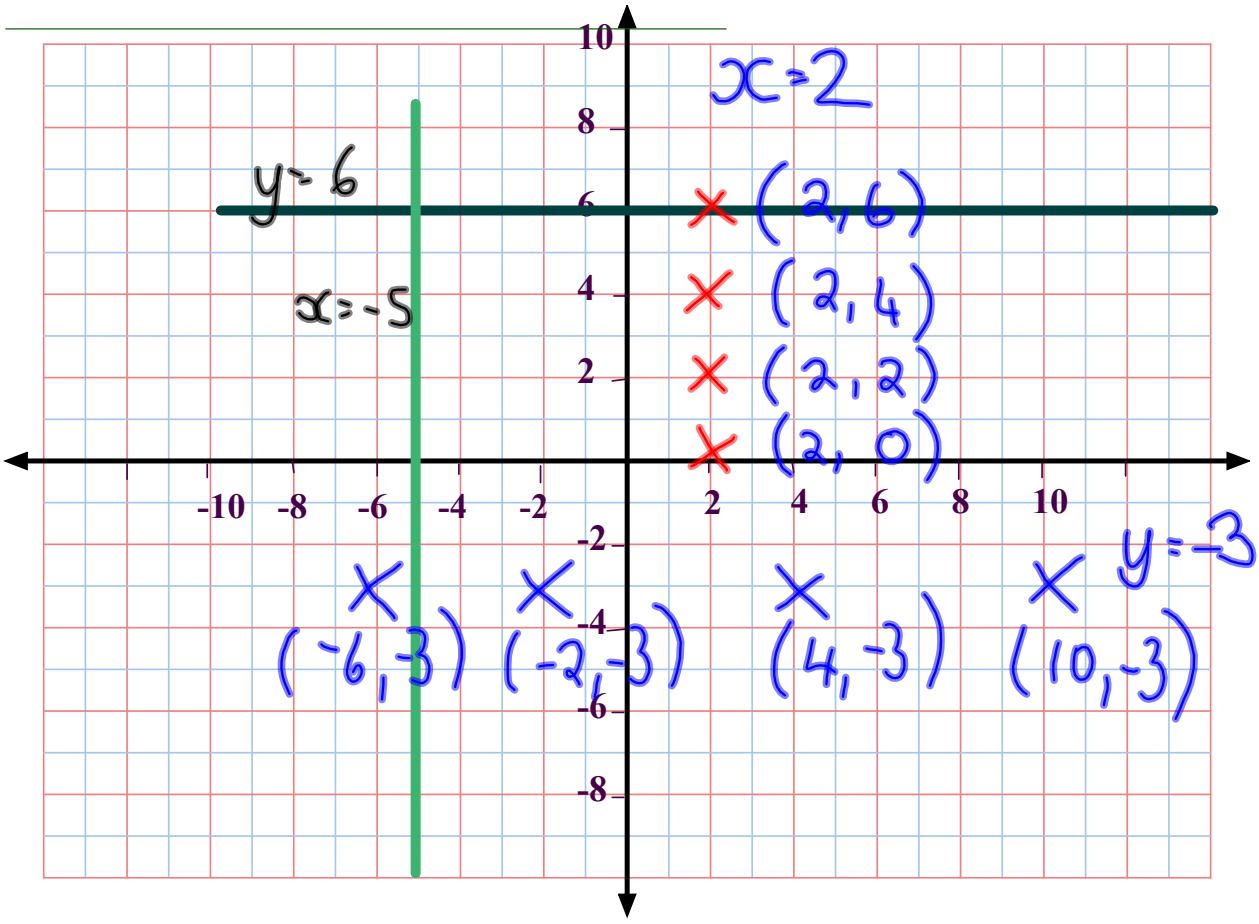
y=4x

y= 4x - 3

y= 4x +4

y= 4x -8

The family of y = 4x



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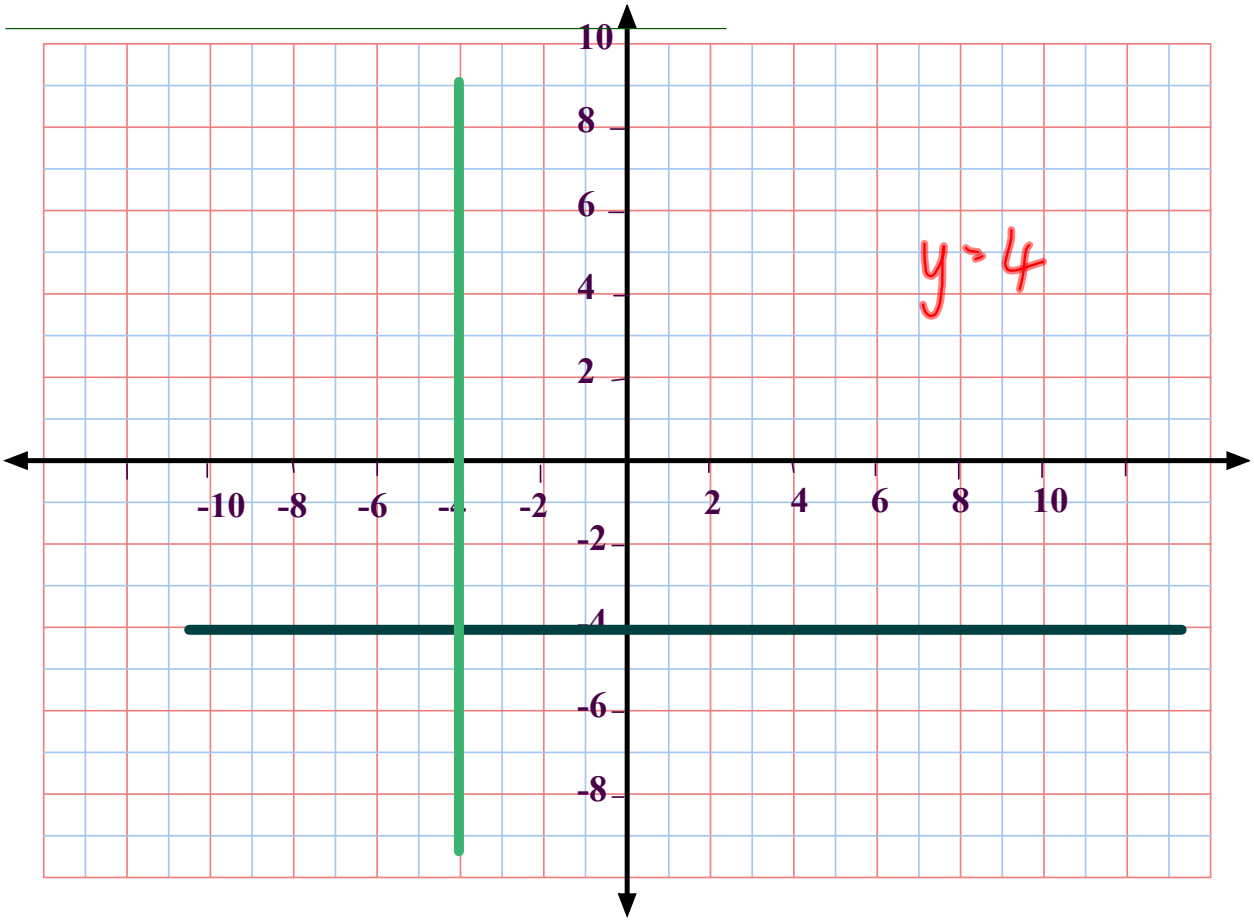
~~#odd nos~~

A7 - A9



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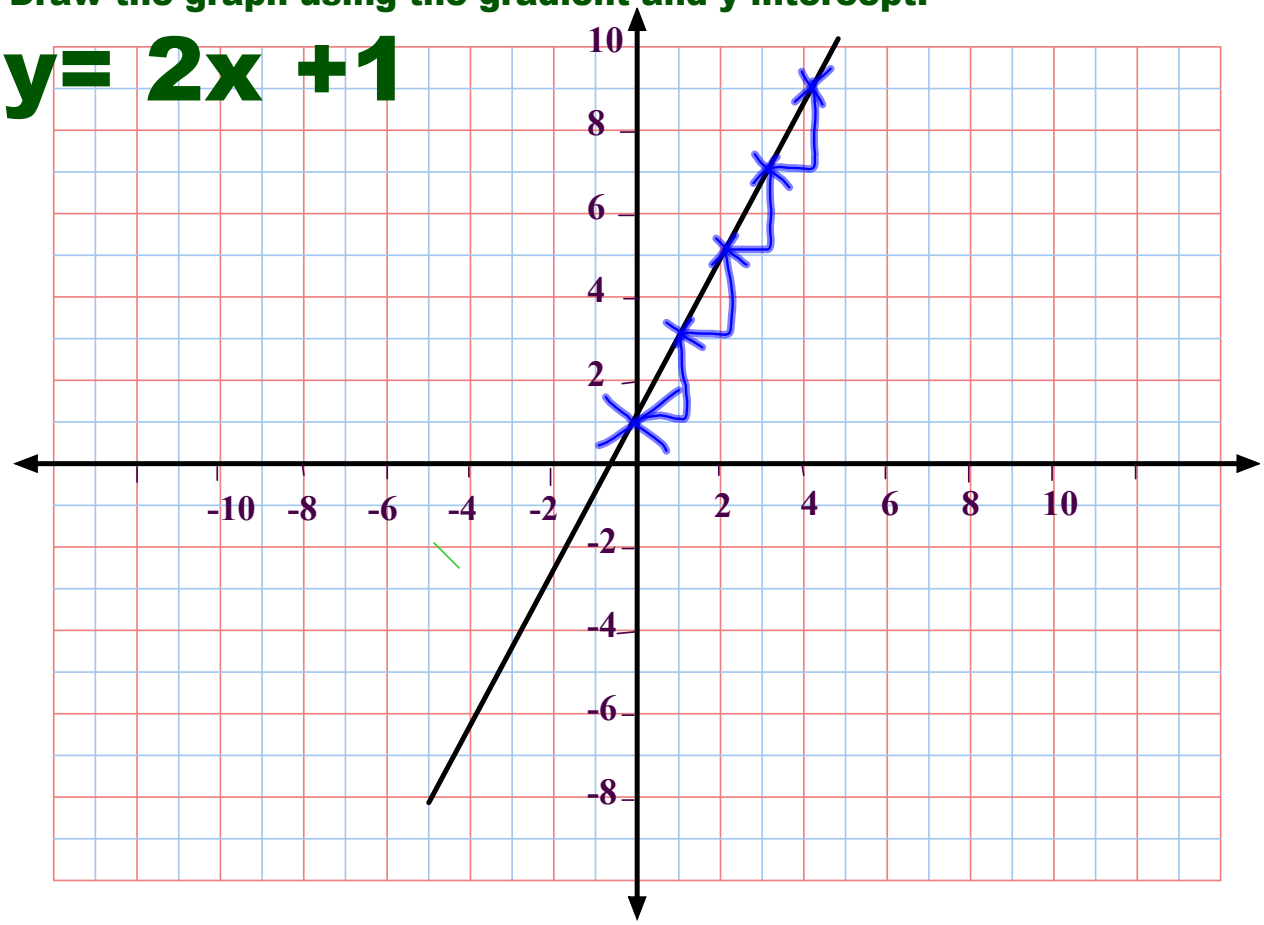
Draw the graph using the gradient and y intercept.

y= 2x +1

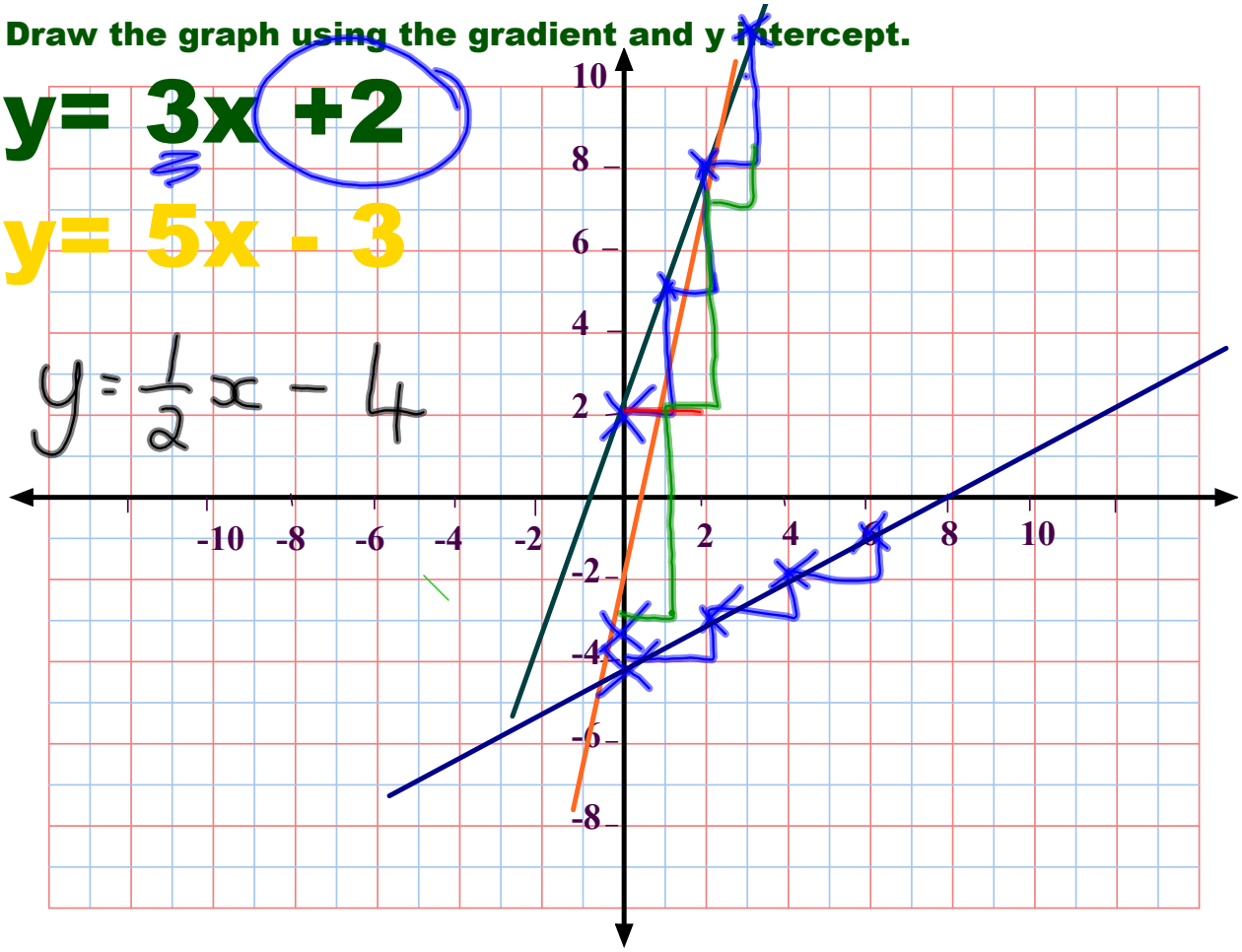


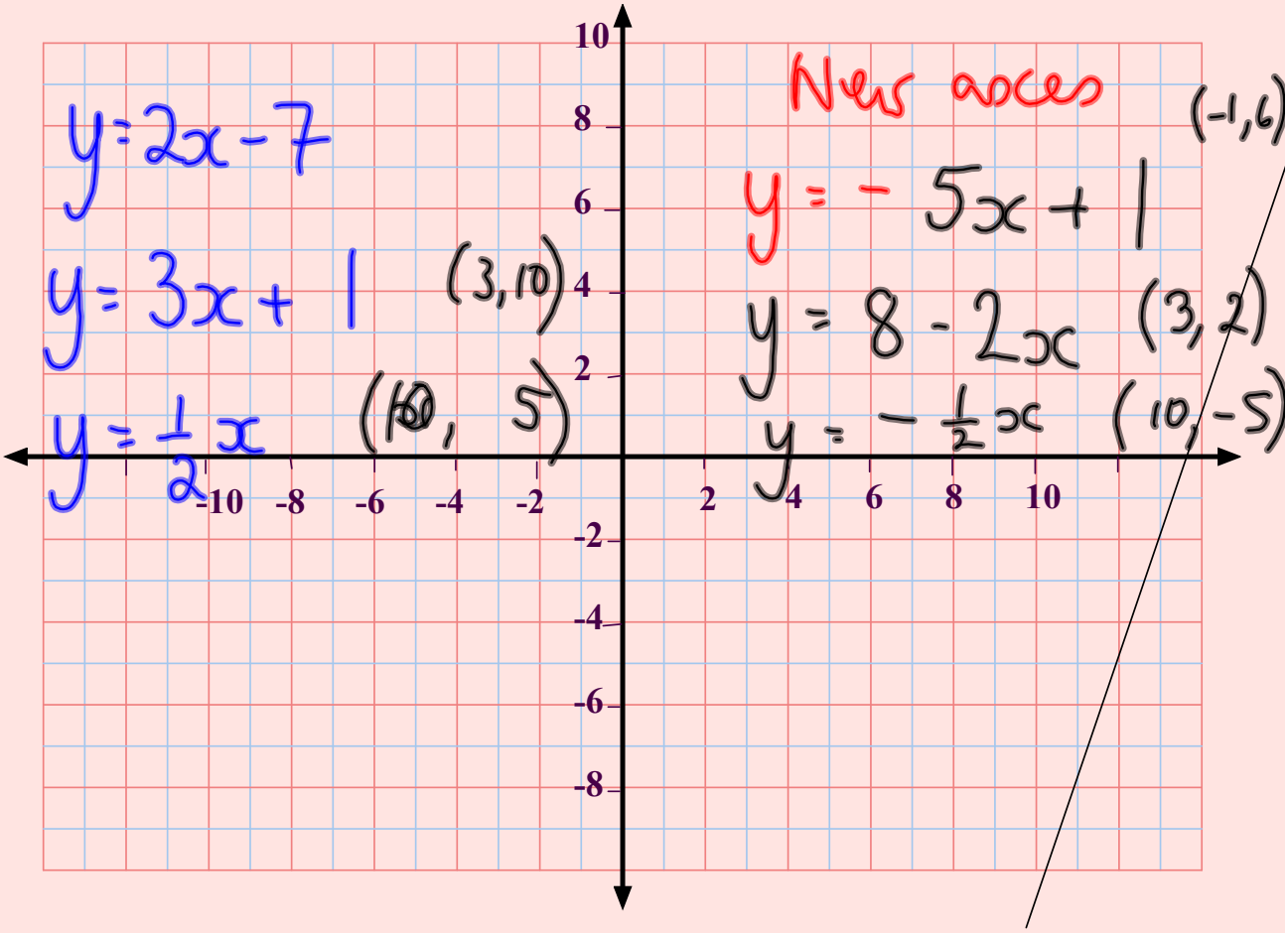
Draw the graph using the gradient and y - intercept.

$y = 3x + 2$

$y = 5x - 3$

$y = \frac{1}{2}x - 4$





What happens when the x value is negative?

On a new page: Draw the graphs of:

a) y= 3x - 2

b) y= 2 - x

c) y = 10- 3x

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Write down 3 pairs of co-ordinates on each of these graphs:

$y=5x$

$x+y = 10$

$y=12-3x$

$x+2y=10$

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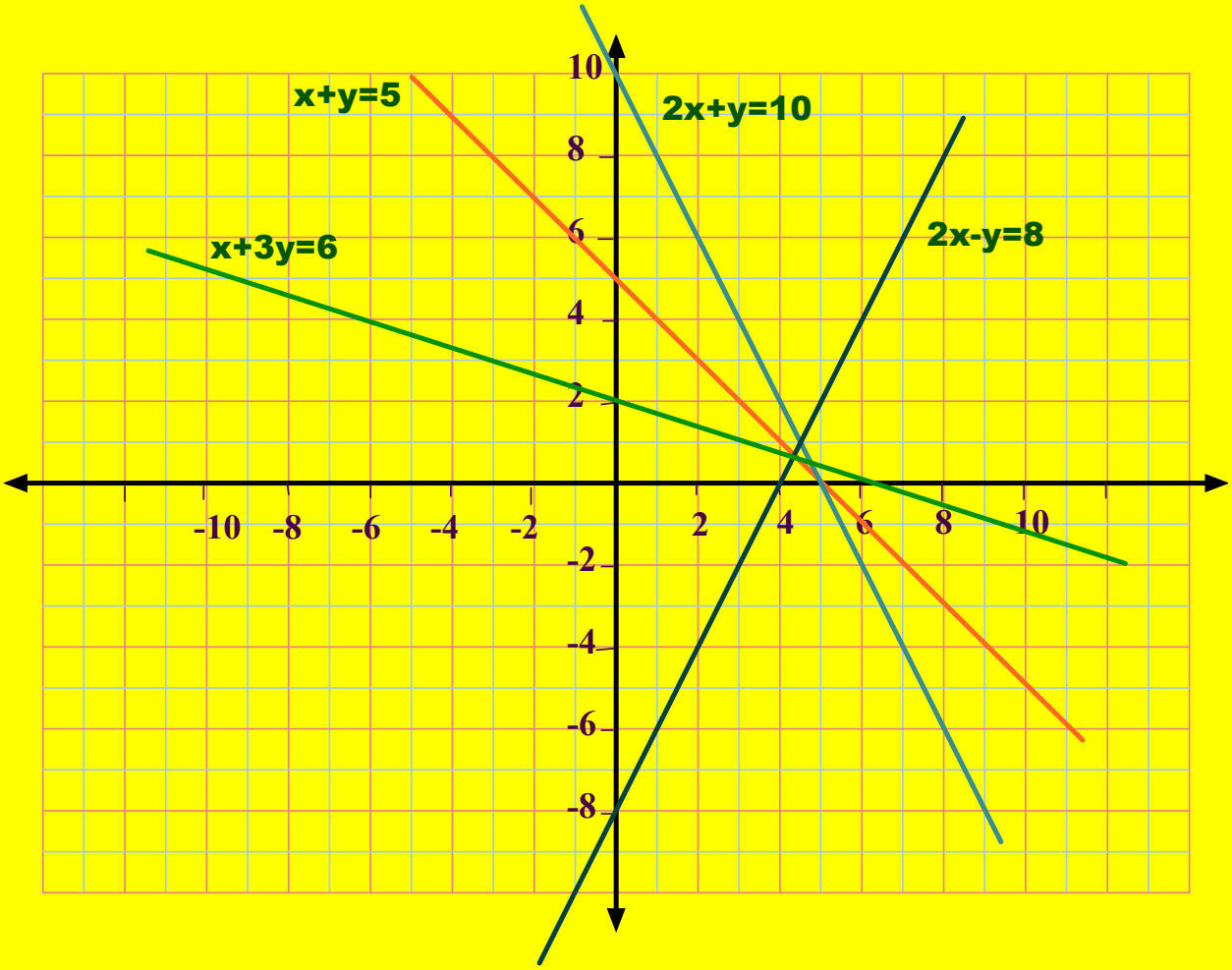


What happens when the equation doesn't start with y=...?

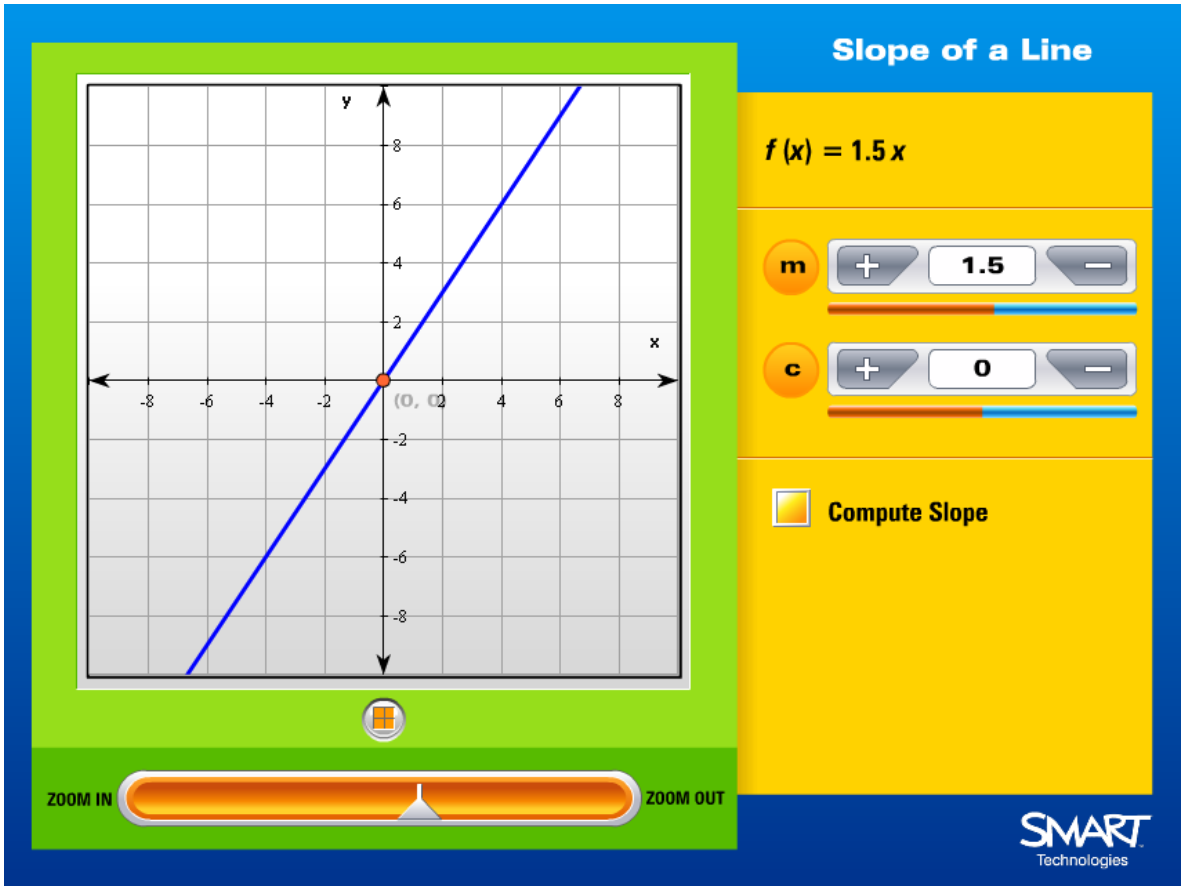
On a new page: Draw the graphs of:

a) $x+y = 5$

b) $2x + y = 10$

c) $2x - y = 8$

d) $x + 3y = 6$


Slope of a Line
f (x) = 1.5 x
m
1.5
c
0
Compute Slope
ZOOM IN
ZOOM OUT
SMART
Technologies

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Homework:

Draw the graphs of
$y= 3x + 4$

$y= 12 - 2x$

$x + y = 6$

= +

1. Investigate different constants

eg

y=x + 1
y=x+2
y=x+3

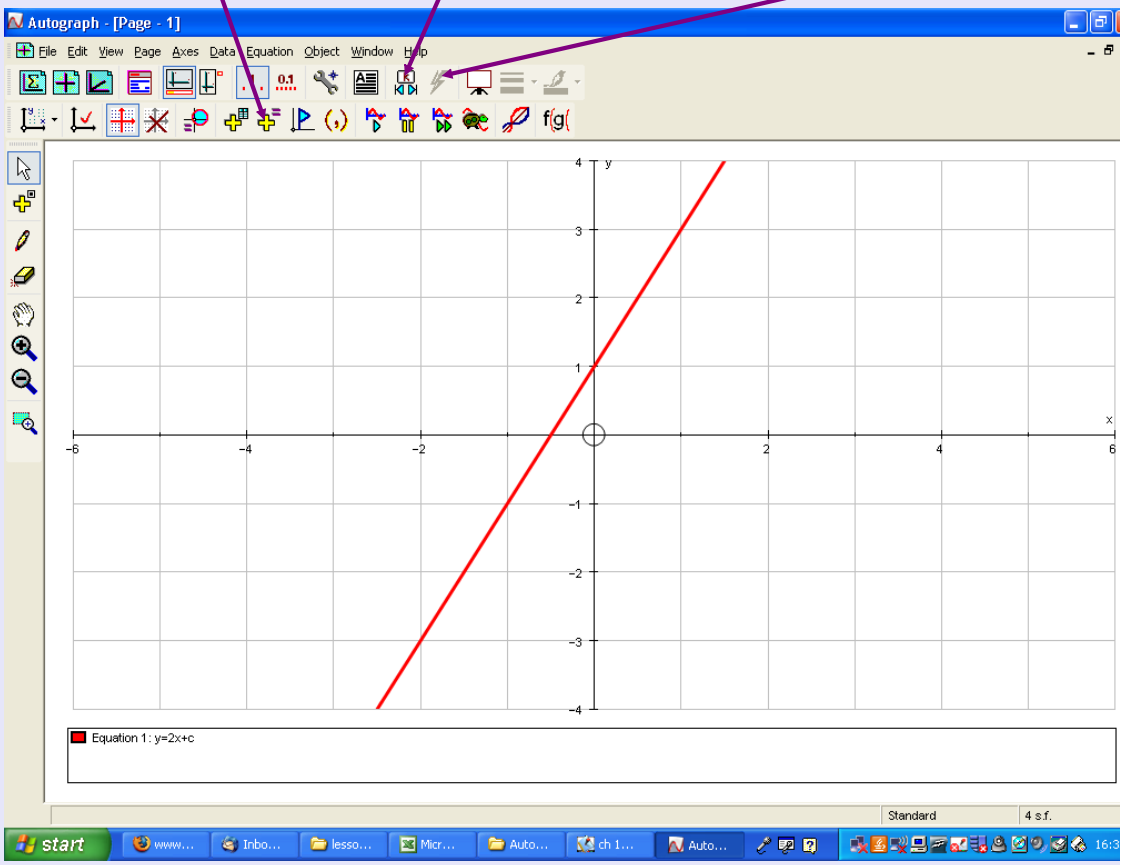
You can use the constant controller to help.

2. Investigate different values of m

eg

y=2x
y=3x
y=4x

You can use the constant controller to help.



What do these graphs look like?
Draw the families in your book.

$y=ax^2$

$y=ax^2+c$

$y=ax^2+bx+c$