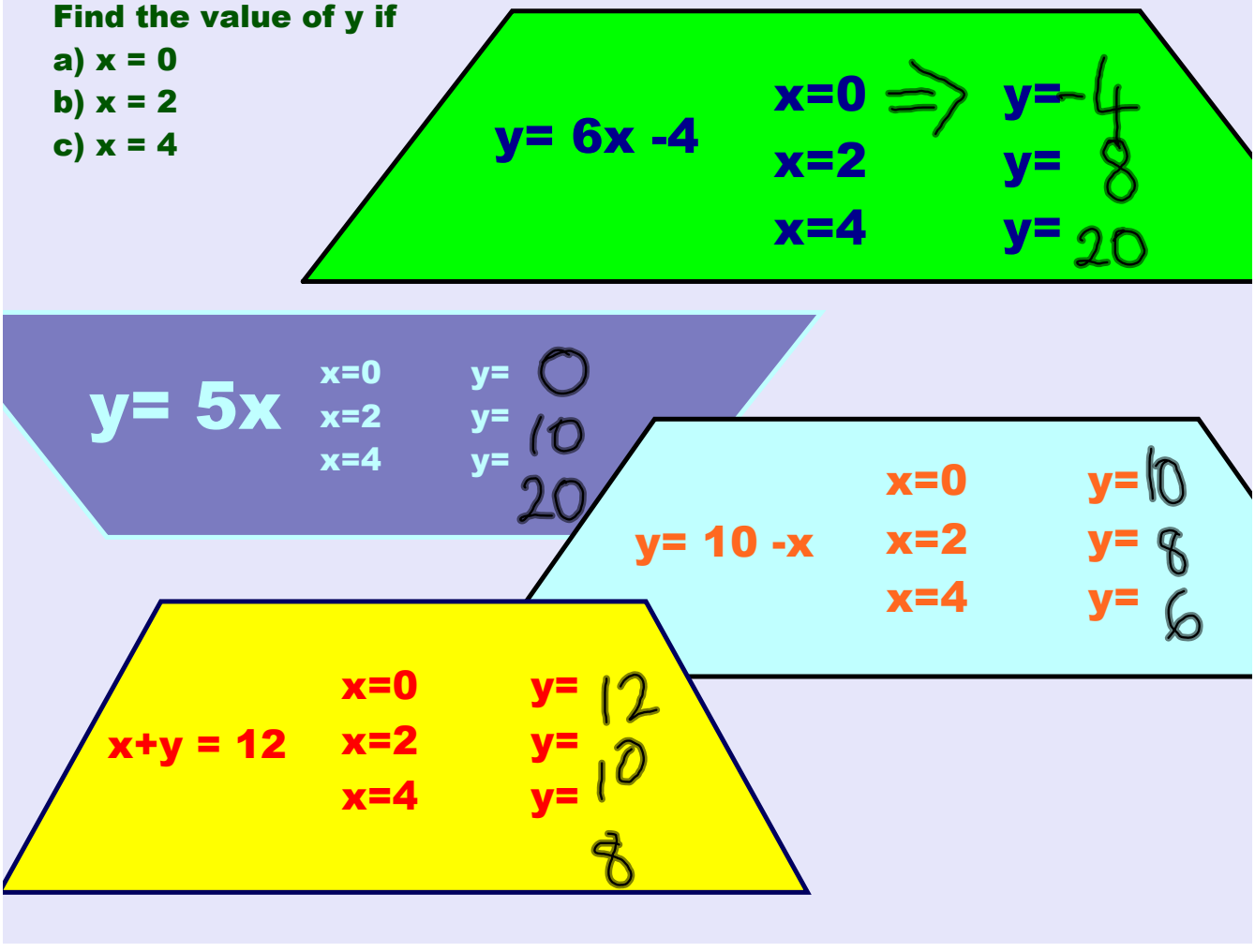
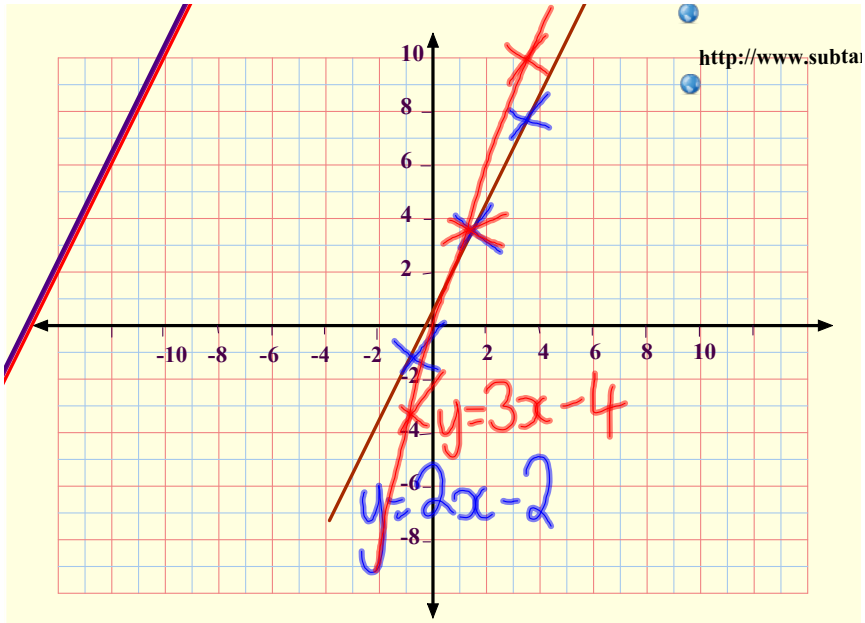
Substituting

Find the value of y if

a) x = 0
b) x = 2
c) x = 4



A reminder..



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= -2
x=2 y= 2
x=4 y= 6

b) y = 2x +4

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

c) y= 2x -6

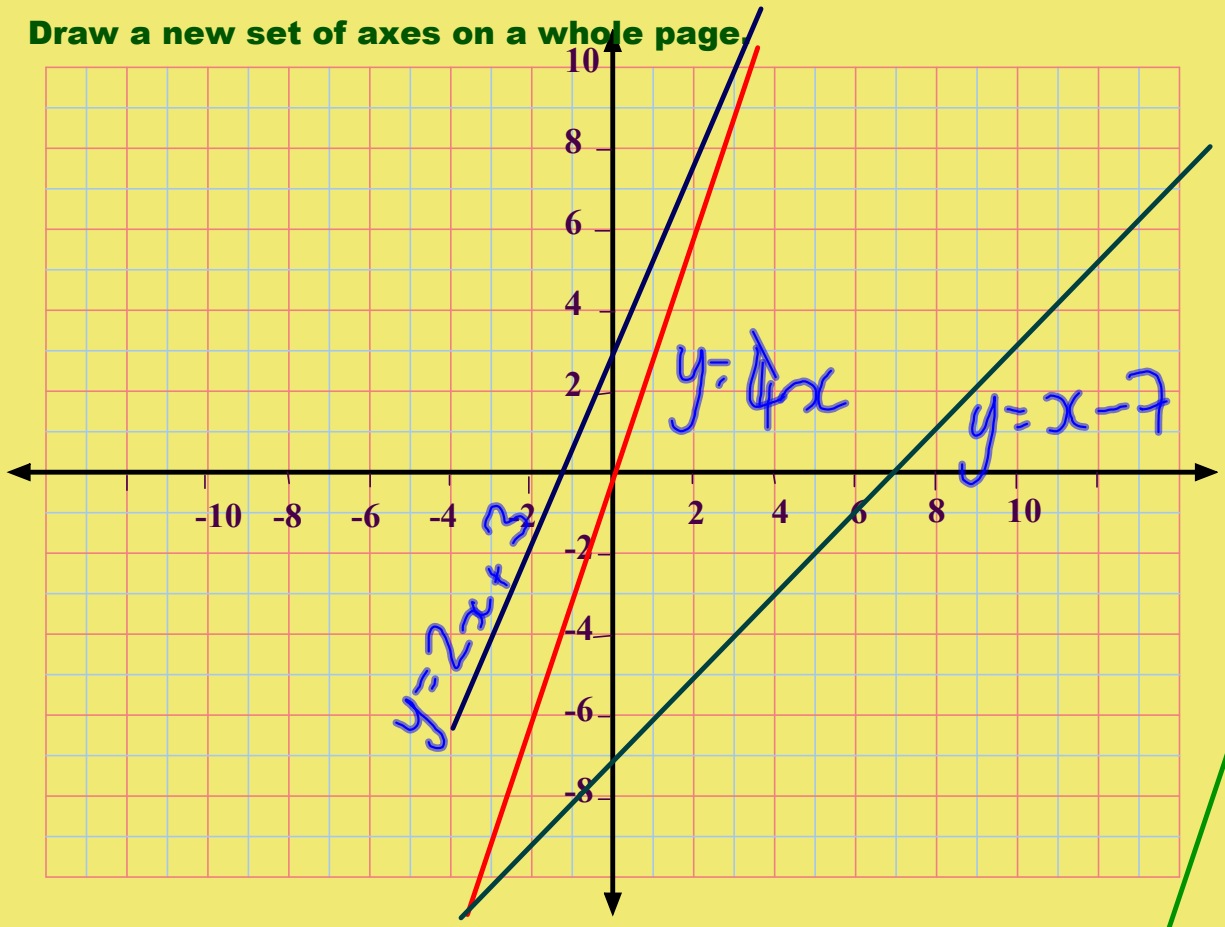
x=0 y=
x=2 y=
x=4 y=

d) y= 1 + 2x

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

what you need to be able to do

Draw a new set of axes on a whole page.



Draw the graphs of:

a) y= 3x - 2

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

b) y = 3x -8

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

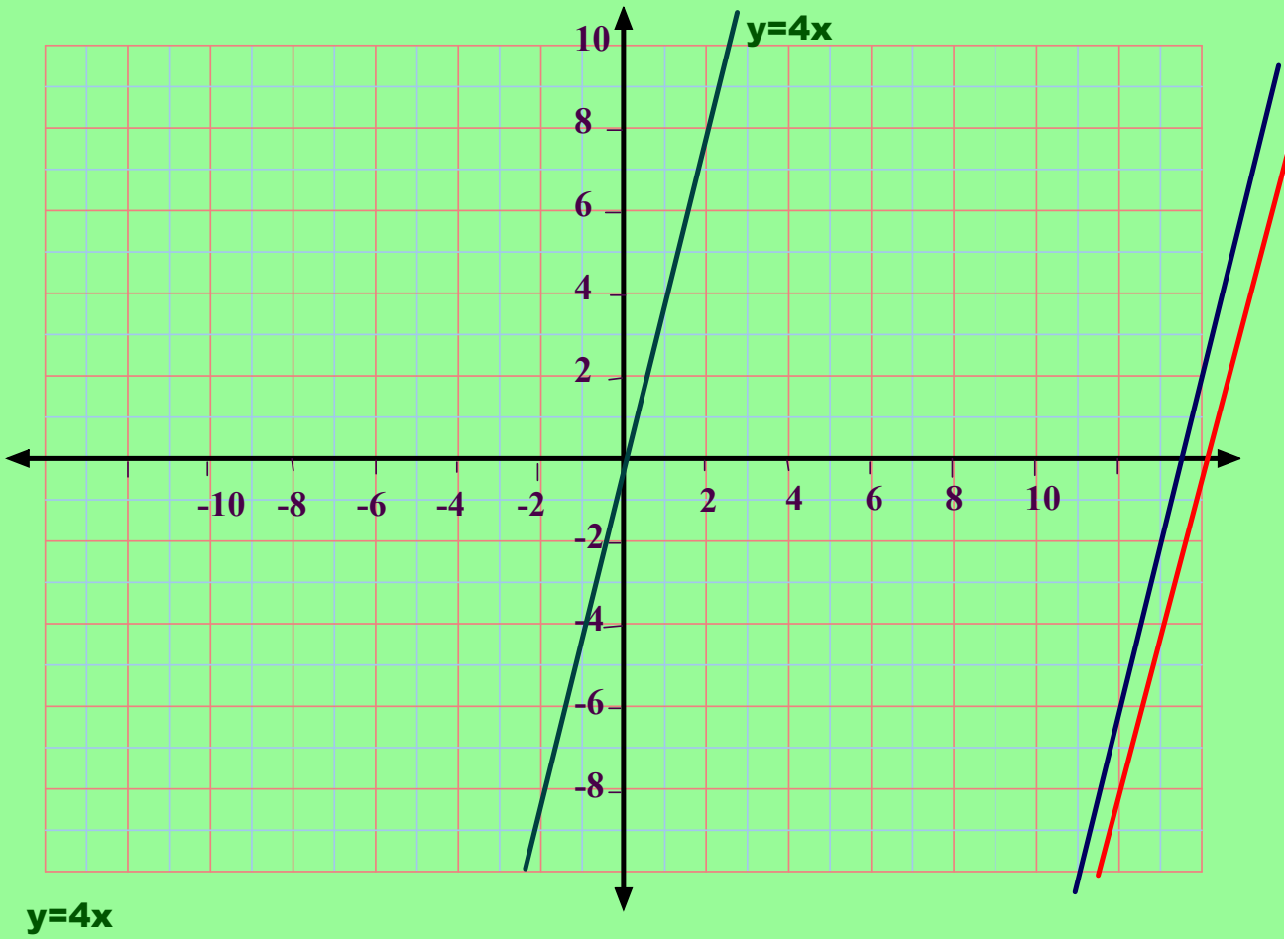
c) y= 3x

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

d) y= 1 + 3x

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

the family of y=3x + c



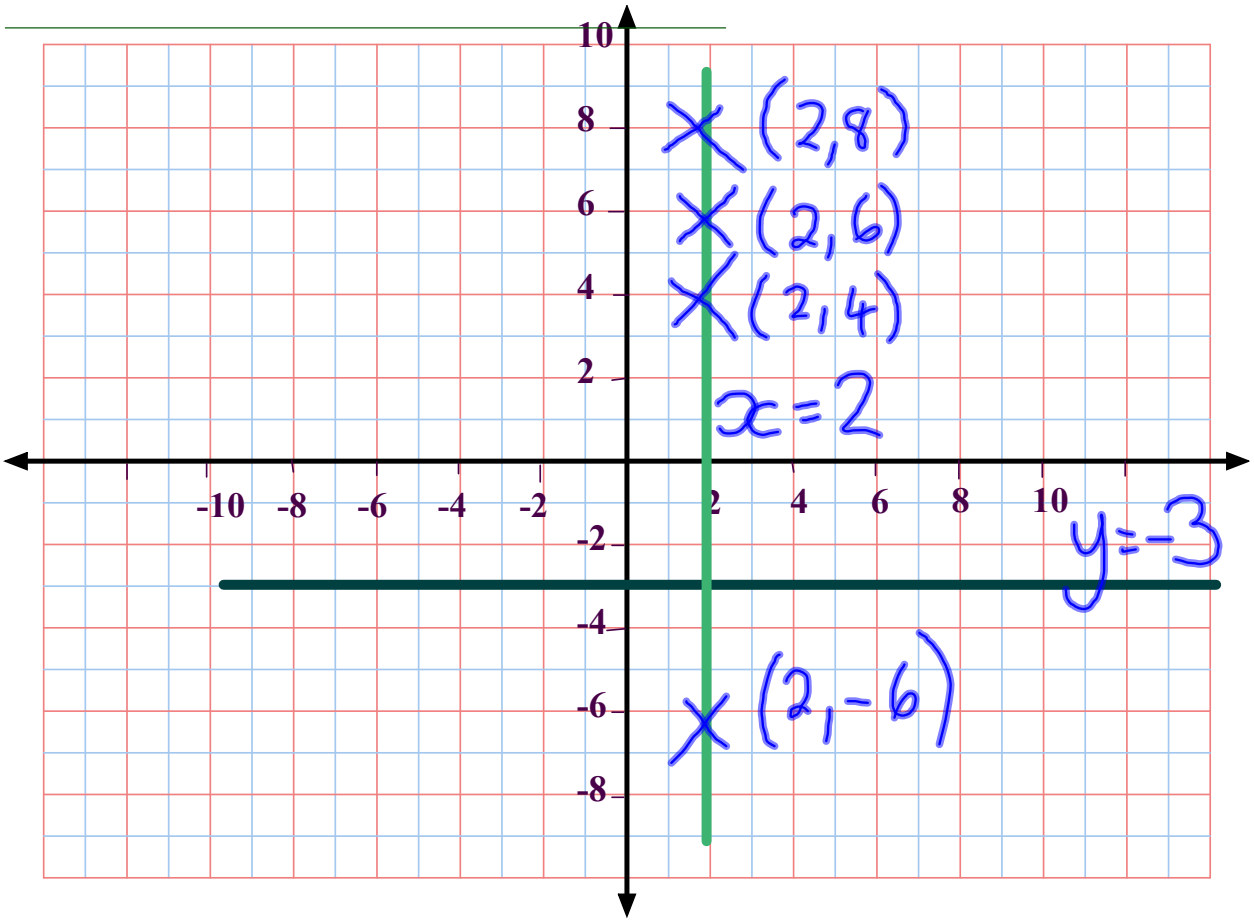
y=4x

y= 4x - 3

y= 4x +4

y= 4x -8

the family of y=4x+c



Page 173 and 174 odds only

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

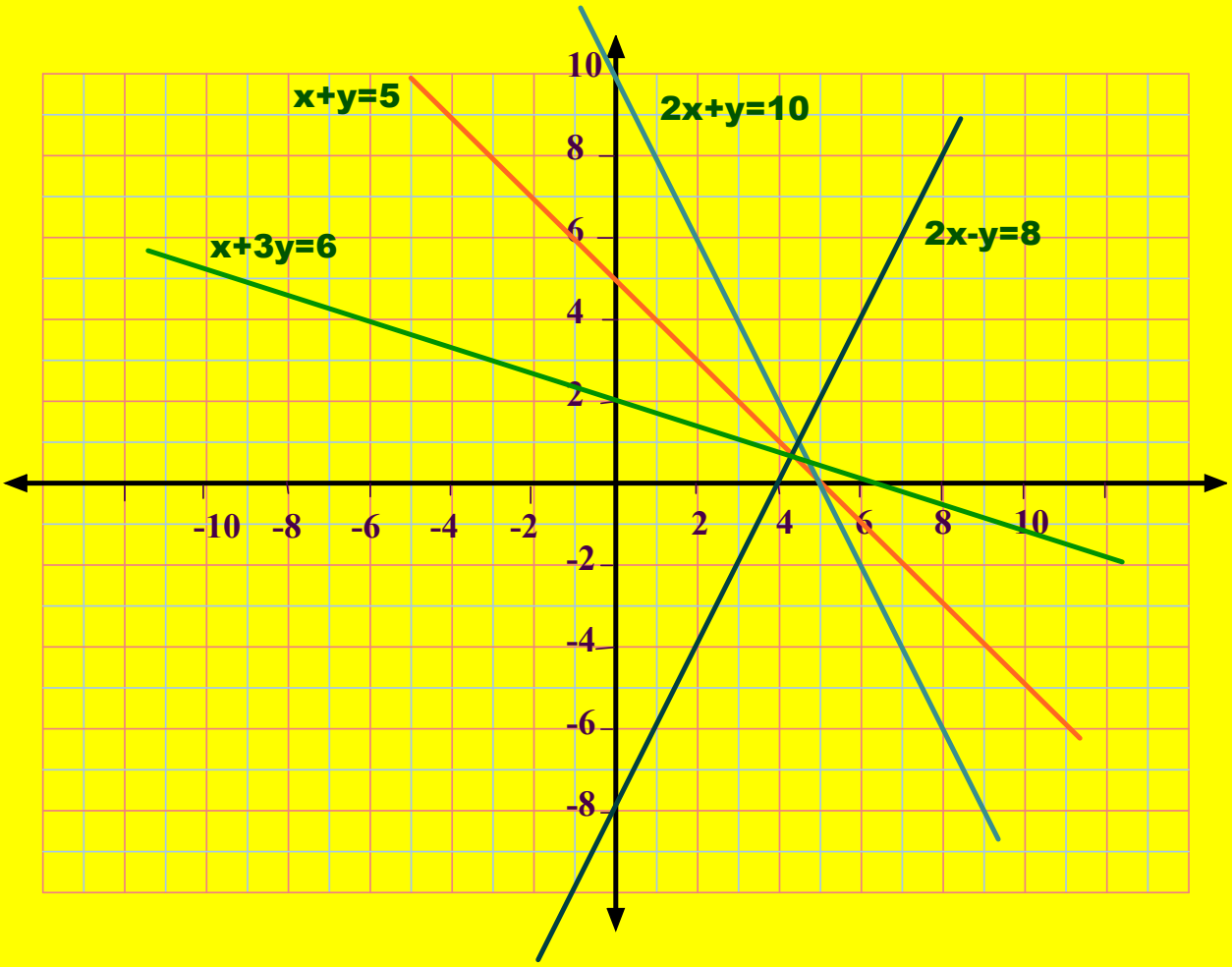
$y=5x$

$x+y = 10$

$y=12-3x$

$x+2y=10$

page 175 A10 onwards



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

y=mx+c

Draw a pair of axes on a whole page with 1cm for 1 unit.
Draw graphs of y=x, y=2x, y =3x, y=4x

Page 333 Q1

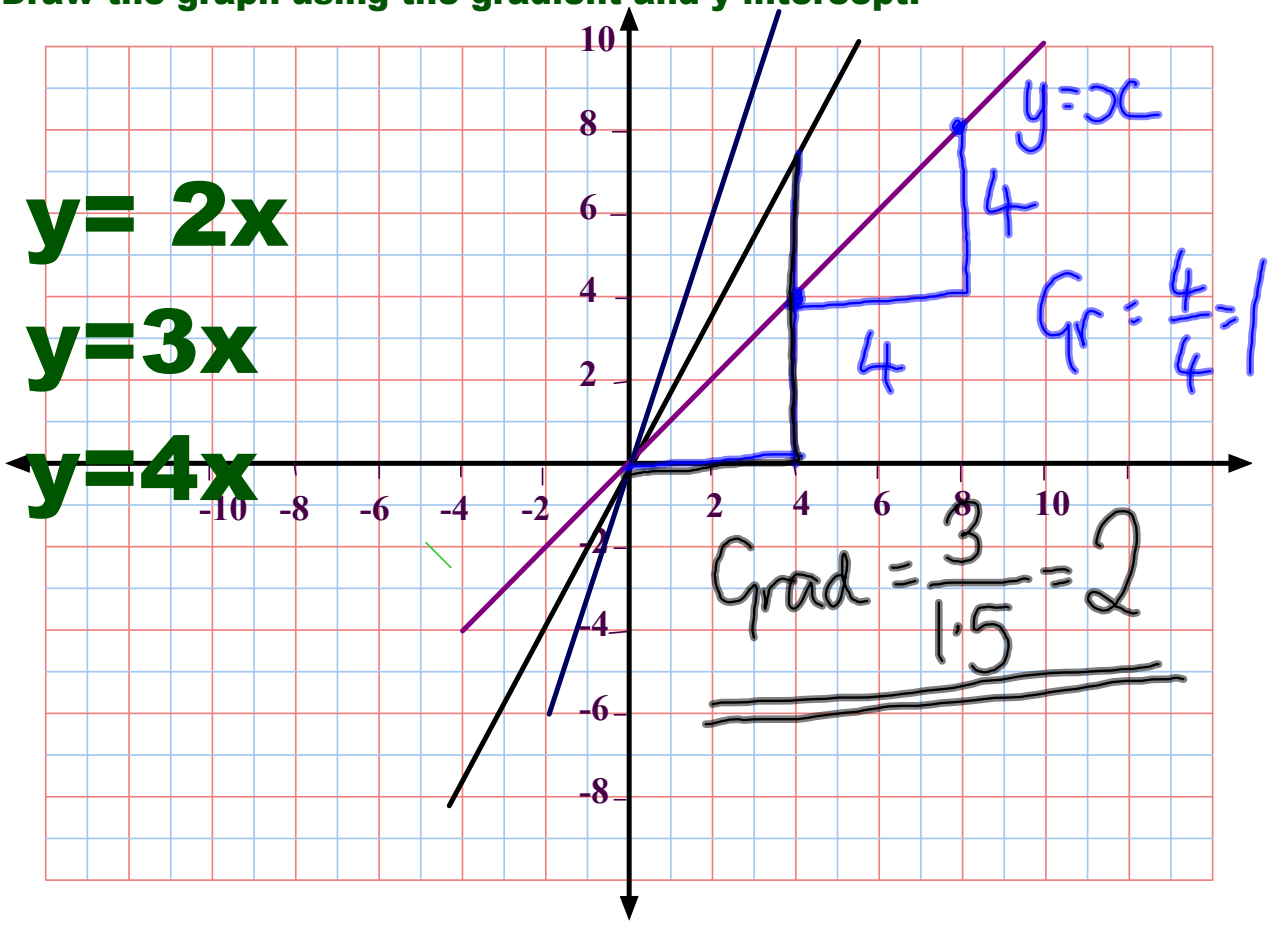
x	0	1	2
2x	0	2	4
3x			
4x			

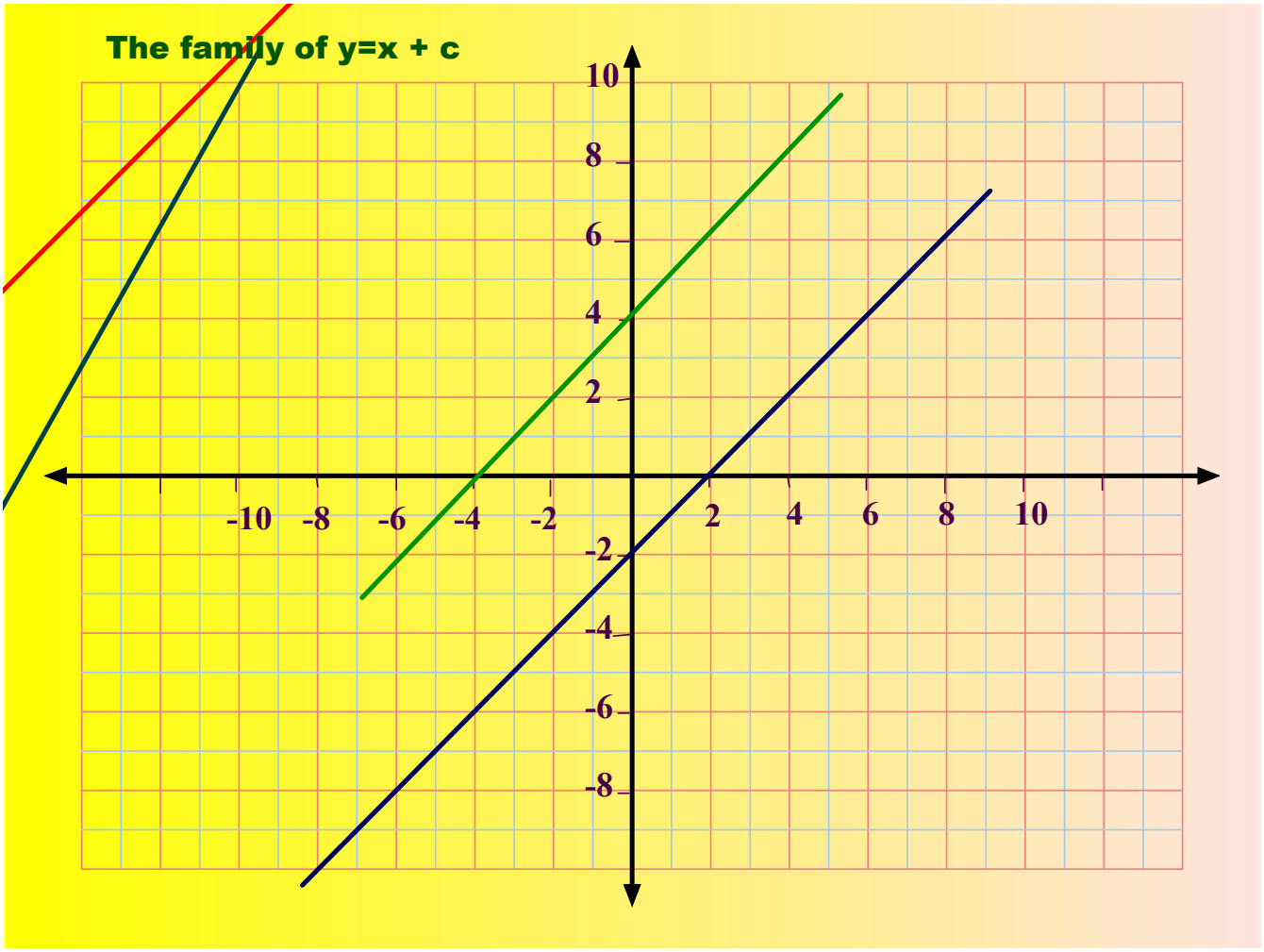
- 2x
- 4x

All straight line graphs have equations of the form y=mx+c.
m is the gradient;
c is the y intercept (where the graph crosses the y axis).

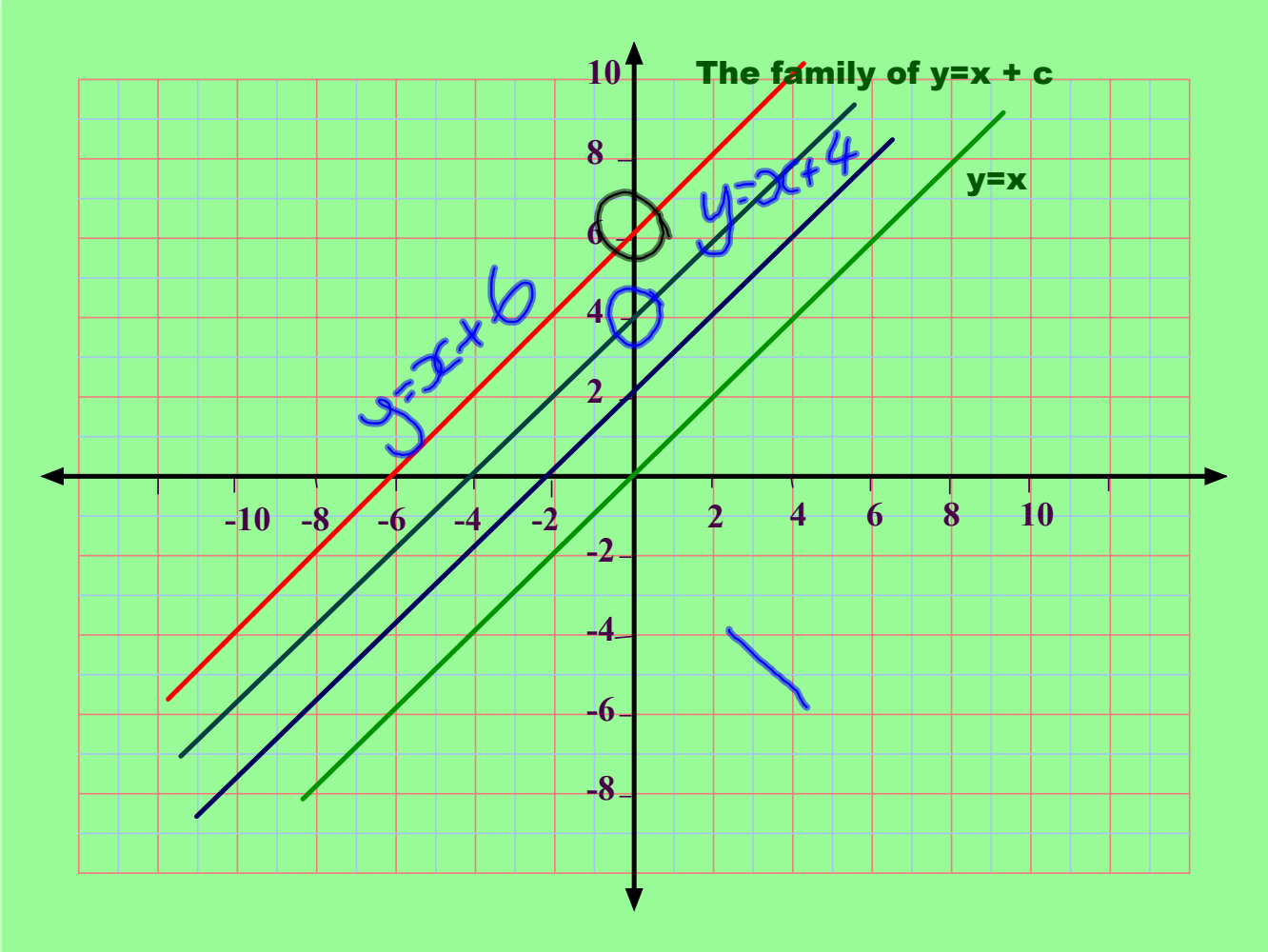
Mar 7-16:09

Draw the graph using the gradient and y intercept.



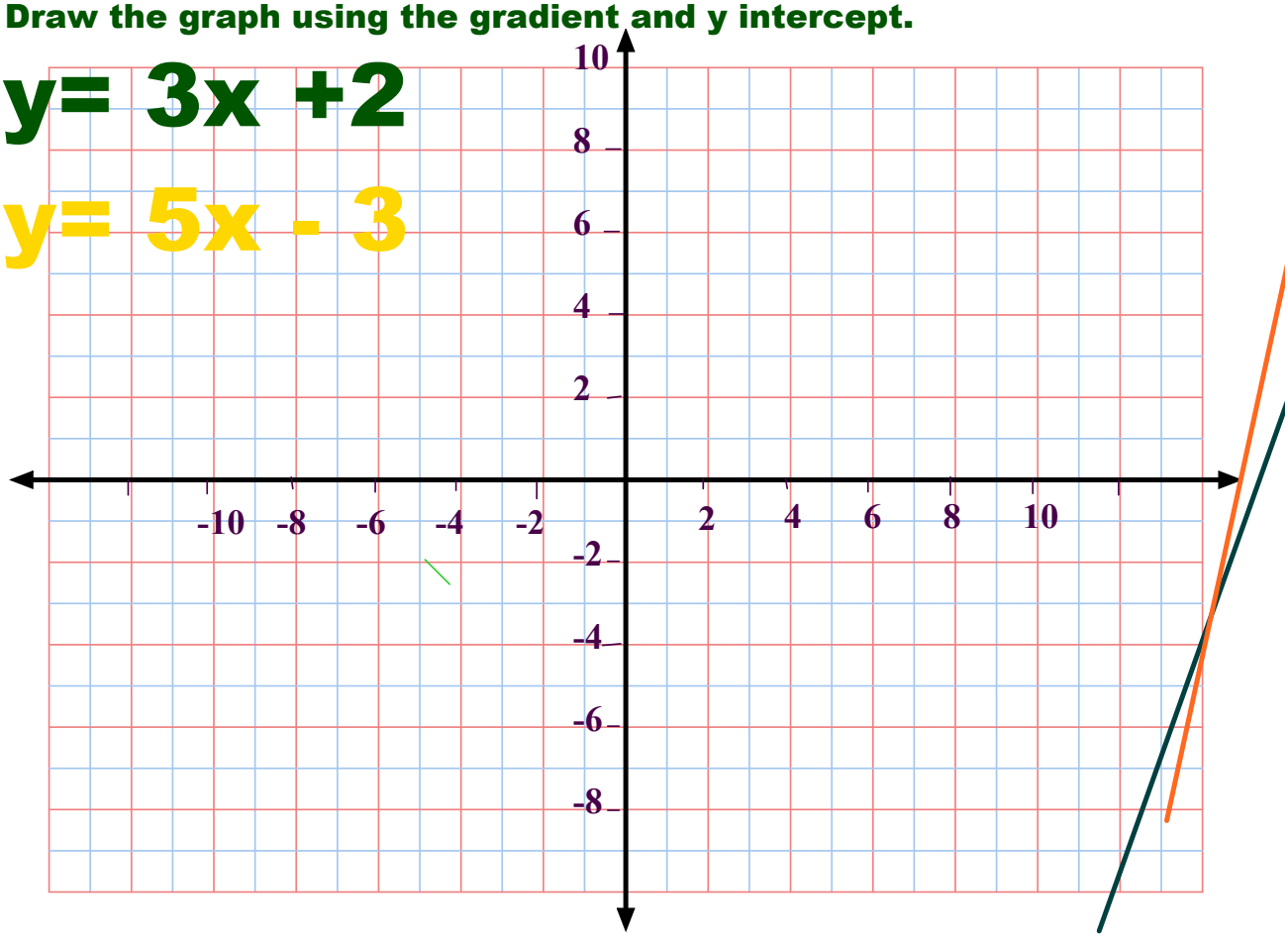


the family of y=x+c



the family of y=x+c

Draw the graph using the gradient and y intercept.



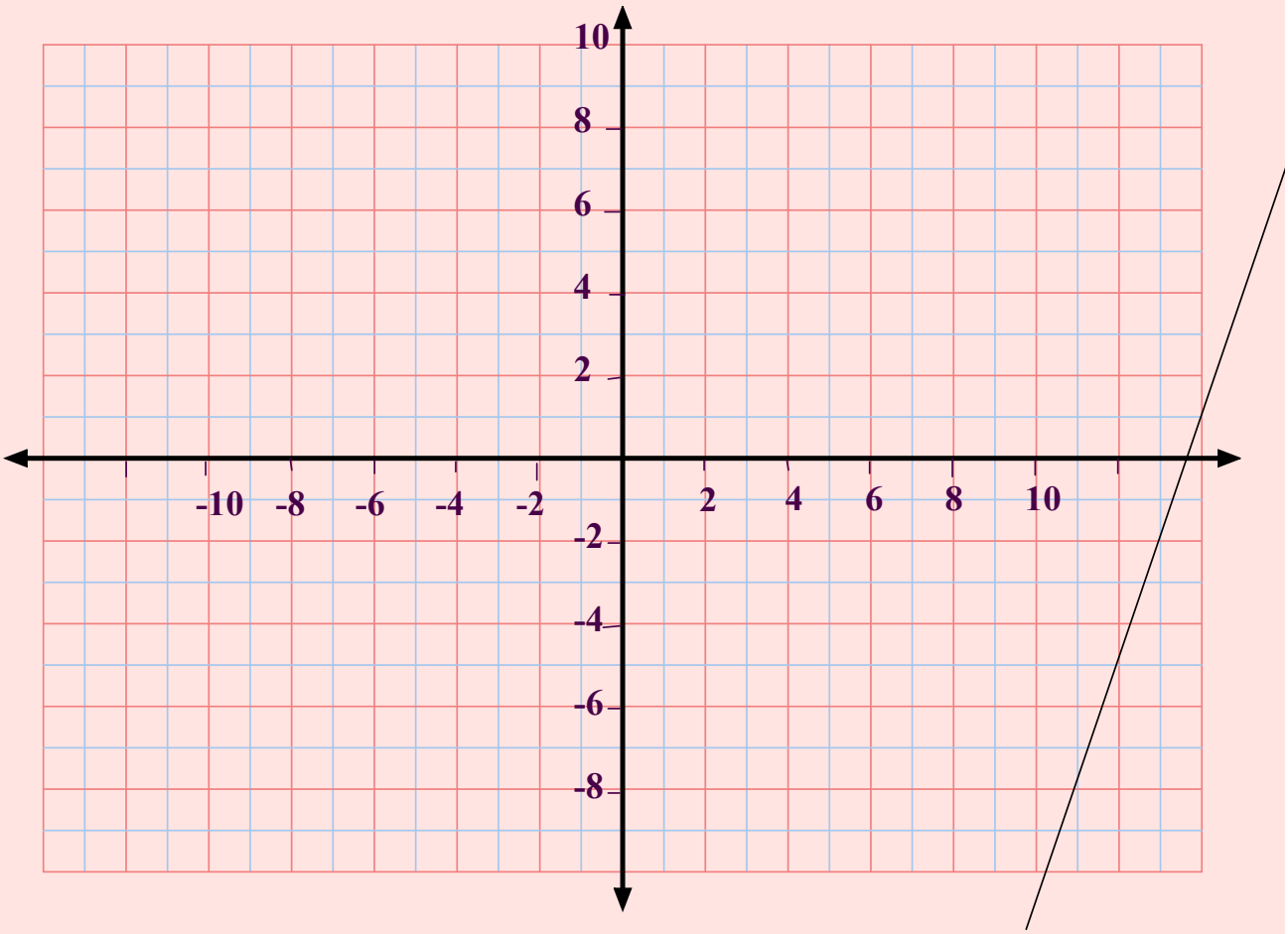
Page 336 B6 onwards

Using autograph,
1) Make a family of graphs all with the same gradient

2) Make a family of graphs that cross the y axis at 5

3) Draw the line y= x + 2.
Can you draw the line perpendicular to y=x+2.
If you succeed, try to do the same with y=2x + 2, y=3x + 2 etc

Copy your answers to each question onto a word document and then print.



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

Pages 334-336

Homework:

Draw the graphs of
y= 3x + 4

y= 12 - 2x

x + y = 6

Straight line graphs

To draw a graph use either method 1:

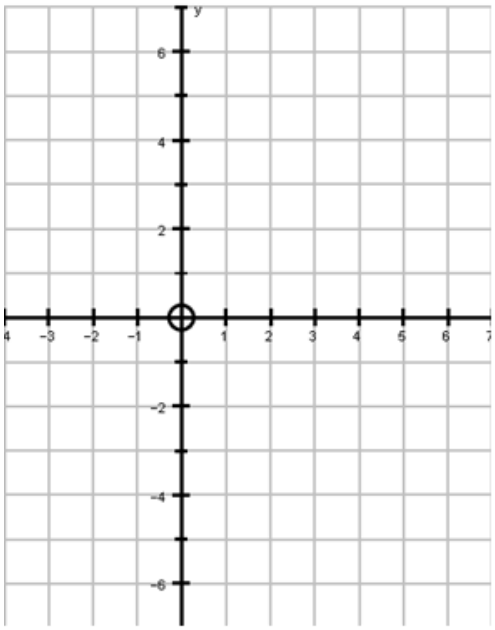
..or method 2....

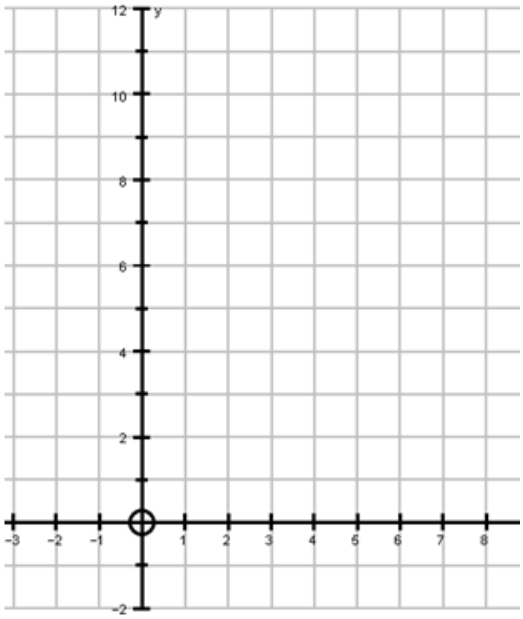
$y = 3x - 5$

$y = 2x + 4$

This crosses the y axis at ....

And has gradient __ (one across and ....up)





The graph y= 7 - x will look different because.....

Draw the graph on one of the axes.

Practical use of graphs: Converting pounds to euros

£10 = 11.30€

£1 = 1.13€

£3 = 3.39€

By choosing 3 pound values, plot a graph showing the conversion rate.
Use axes such that £1 is represented by 2cm

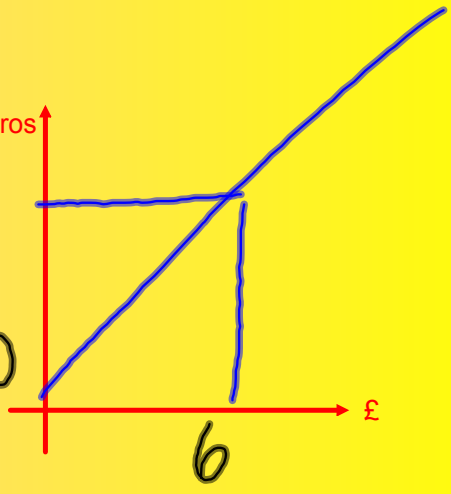
Use your graph to work out how many

euros are equivalent to £6 6.8€

euros are equivalent to £3.50 £4.00

Pounds are equivalent to 5€ £4.50

pounds are equivalent to 2.50€ £2.20



Practical use of graphs: renting a car

0 miles £200
100 miles £280
200 m £360

A car costs £200 to hire plus 80p per mile.

Draw a graph showing the cost of the hire against the miles covered.

Cost

Let 2cm be £100

mileage

Let 2cm be 100 miles

Find the cost of travelling
a) 250 miles £400
£505 b) 375 miles
Find the mileage for £300.
125 miles

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