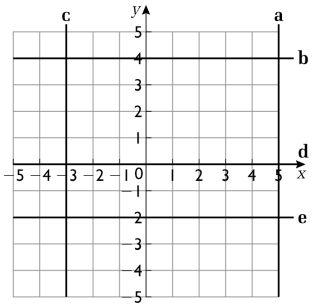
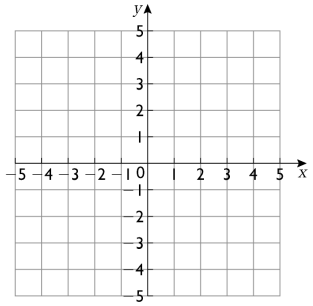
Homework 1

1 Give the equation of each labelled line in the diagram.



2 **a** On the grid provided draw the lines:

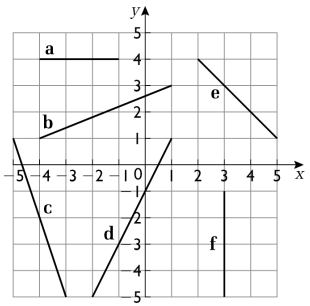
i $x = 4$ **ii** $x = -1$ **iii** $y = 3$ **iv** $y = -3$



b **i** Shade in the rectangle defined by these four lines.

ii Calculate its area.

3 State the gradient of each line segment in the diagram.



Homework 2

1 Calculate the gradient of the line which passes through:

a (1, 3) and (3, 7) **b** (–2, 1) and (2, 13)

c (–3, –2) and (5, 2) **d** (4, –3) and (8, –2)

e (2, 3) and (3, 1) **f** (–2, 2) and (–4, 12)

g (2, –4) and (–4, –2) **h** (3, 1) and (13, –1)

2 **a** Draw the line $y = 2x + 3$ by first completing the table.

x	0	1	2	3	4
$y = 2x + 3$					

b What is the gradient of the line?

3 By first making a table, draw the line with equation $y = -3x - 4$.

4 State the gradient of the line with equation:

a $y = 3x + 1$ **b** $y = -2x + 5$ **c** $y = -x - 2$

d $y = 4$ **e** $x = 2$ **f** $y = x$

Homework 3

1 For each line state: **i** its gradient **ii** its y-intercept.

a $y = 2x + 4$ **b** $y = -3x + 1$ **c** $y = 4x - 3$

d $y = 2x$ **e** $y = \frac{1}{2}x + 4$ **f** $y = -\frac{1}{4}x - 1$

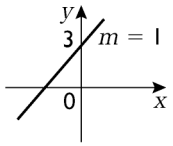
2 Make a rough sketch of each of the following, identifying the y-intercept and gradient.

a $y = x + 1$ **b** $y = -x + 3$ **c** $y = 4x - 3$

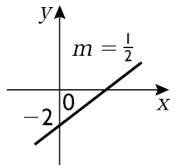
d $y = 2x$ **e** $y = \frac{1}{2}x + 4$ **f** $y = -\frac{1}{4}x - 1$

3 Examine each sketch. The lines have an equation of the form $y = mx + c$.
Find the value of m and c and state the equation of each.

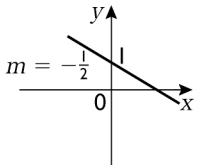
a



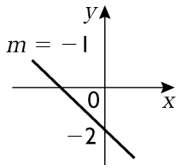
b



c

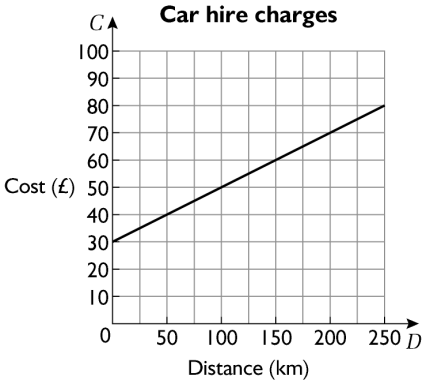


d



Homework 4

1 The graph shows the charges for hiring a car.
There is a basic charge plus a mileage charge.

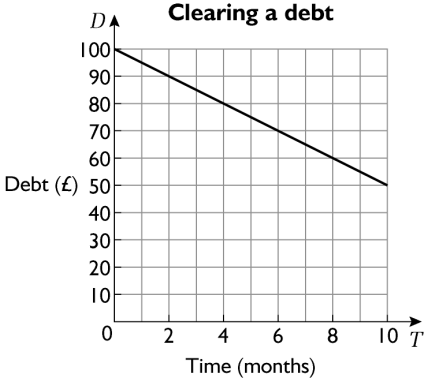


a Work out the equation of the line.

b Use the equation to work out the cost of car hire when the distance travelled is 400 km.

c What distance corresponds to a cost of £90?

2 Melanie is clearing off a debt. The graph shows how the debt is reduced as time passes.



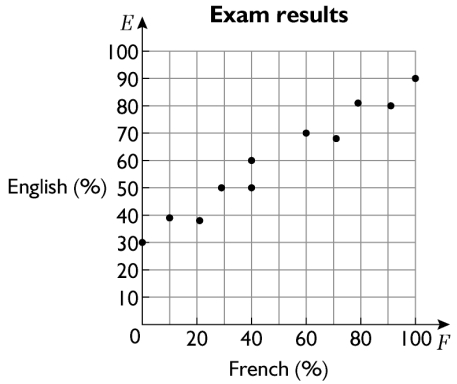
a Work out the equation of the line.

b Use the equation to work out when the debt will be paid off.

c What was the size of the original debt?

Homework 5

1 The scatter graph shows the results of 11 students sitting English and French exams.



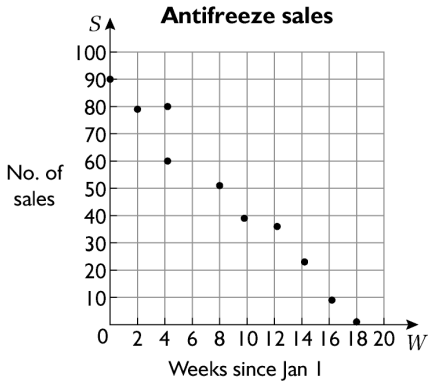
a Describe the correlation between English and French marks.

b Draw a line of best fit.

c Work out the equation of your line.

d Use your equation to estimate the English mark of someone who scored 50% in French.

2 A shopkeeper logged the sale of antifreeze over a 20 week period starting on 1 January.
The scatter graph records the findings.



a Describe the correlation between *Weeks since 1 January* and *Number of sales*.

b Draw a line of best fit.

c Work out the equation of your line.

d Use your equation to estimate the number of sales 6 weeks after the start of January.

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