Lesson 3

GCSE Mathematics
Graphworks

3.1 Plotting The Algebra #1

Given an algebraic description, can you draw the line ?

Example

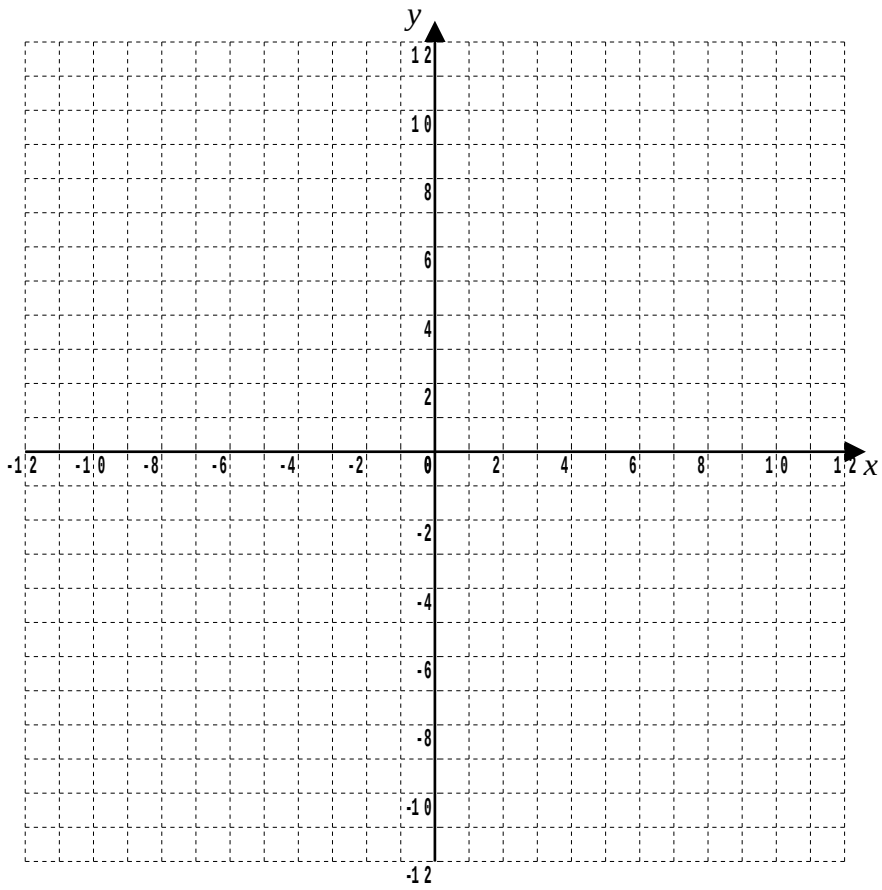
(i) Plot the lines; $y = 2x + 8$ $y = -\frac{1}{2}x - 2$ $y = -6$

Clearly show which equation goes with which line.

[6 marks]

(ii) Shade in the triangle formed and mark on that triangle's right angle.

[2 marks]



Teaching Video: http://www.NumberWonder.co.uk/v9005/3.mp4

3.2 Exercise

Marks Available : 47

Question 1

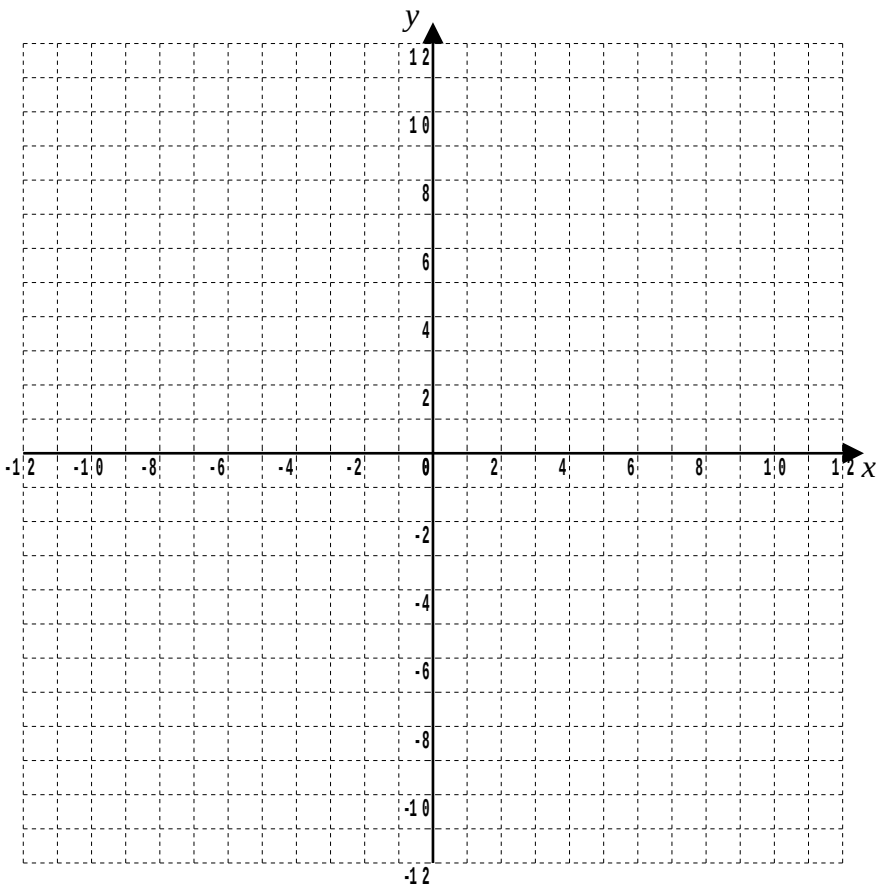
(i) Plot the lines; $y = 3x + 1$ $y = \frac{1}{2}x - 4$ $y = -2x + 11$

Clearly show which equation goes with which line.

[6 marks]

(ii) Shade in the triangle formed and mark on that triangle's right angle.

[2 marks]



Question 2

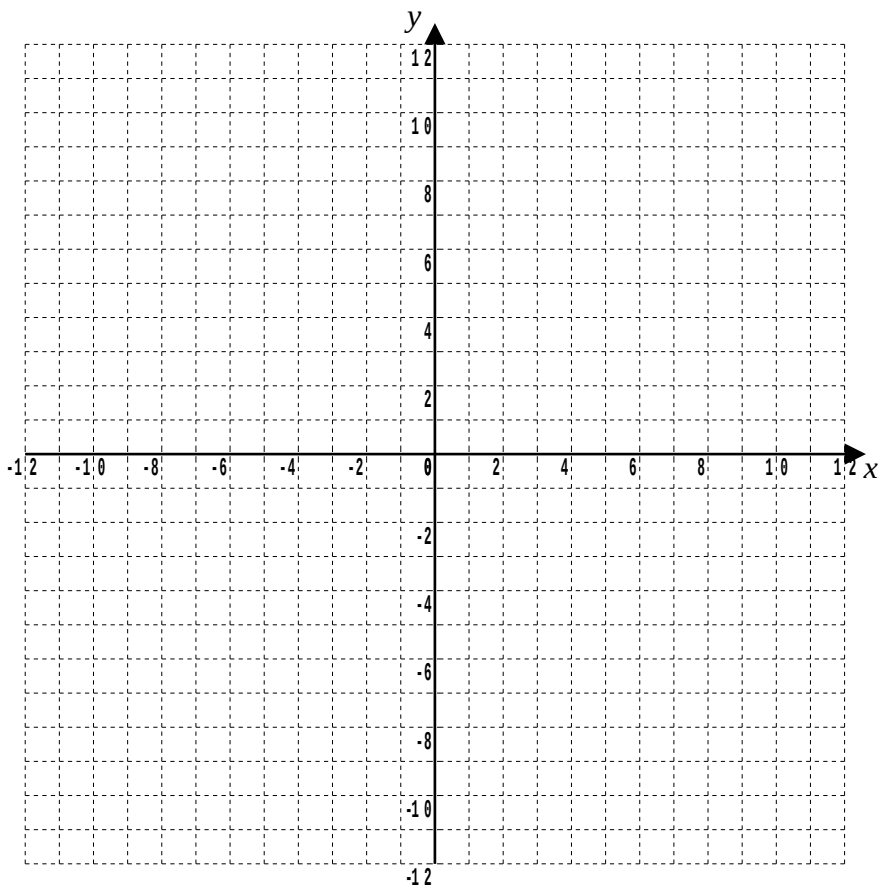
(i) Plot the lines; $y = 2x + 6$ $y = \frac{1}{2}x - 3$ $y = 4x + 4$

Clearly show which equation goes with which line.

[6 marks]

(ii) Shade in the triangle formed.

[2 marks]



Question 3

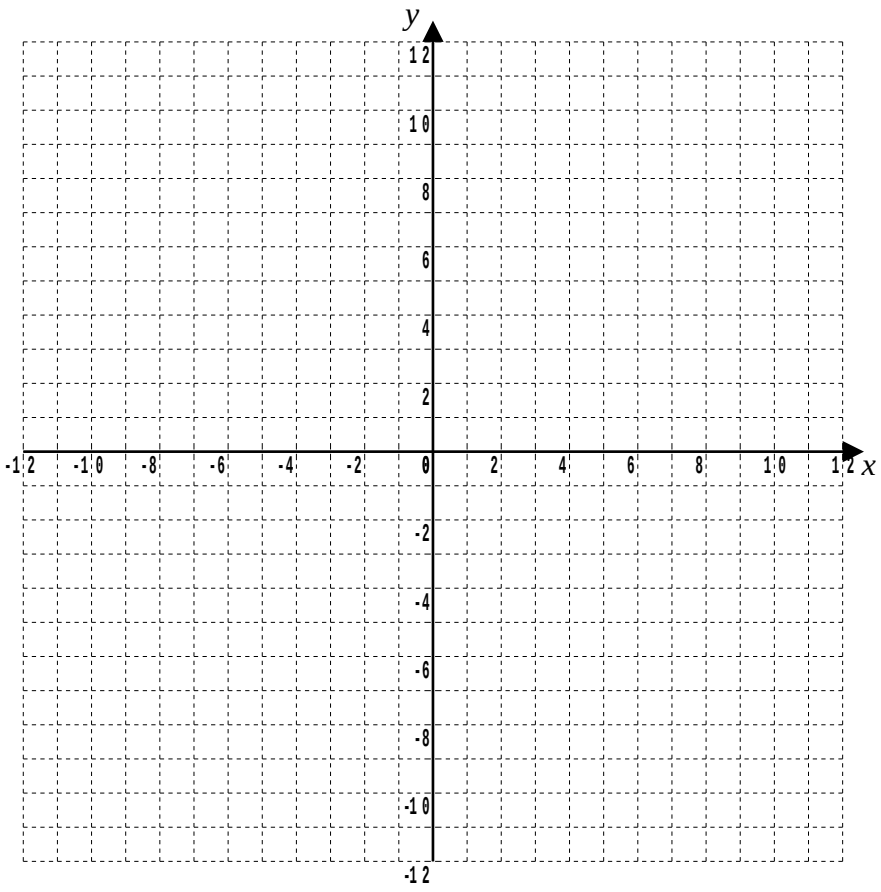
(i) Plot the lines; $y = \frac{1}{2}x + 8$ $y = -2x - 7$ $x = 2$

Clearly show which equation goes with which line.

[6 marks]

(ii) Shade in the triangle formed and mark on that triangle's right angle.

[2 marks]



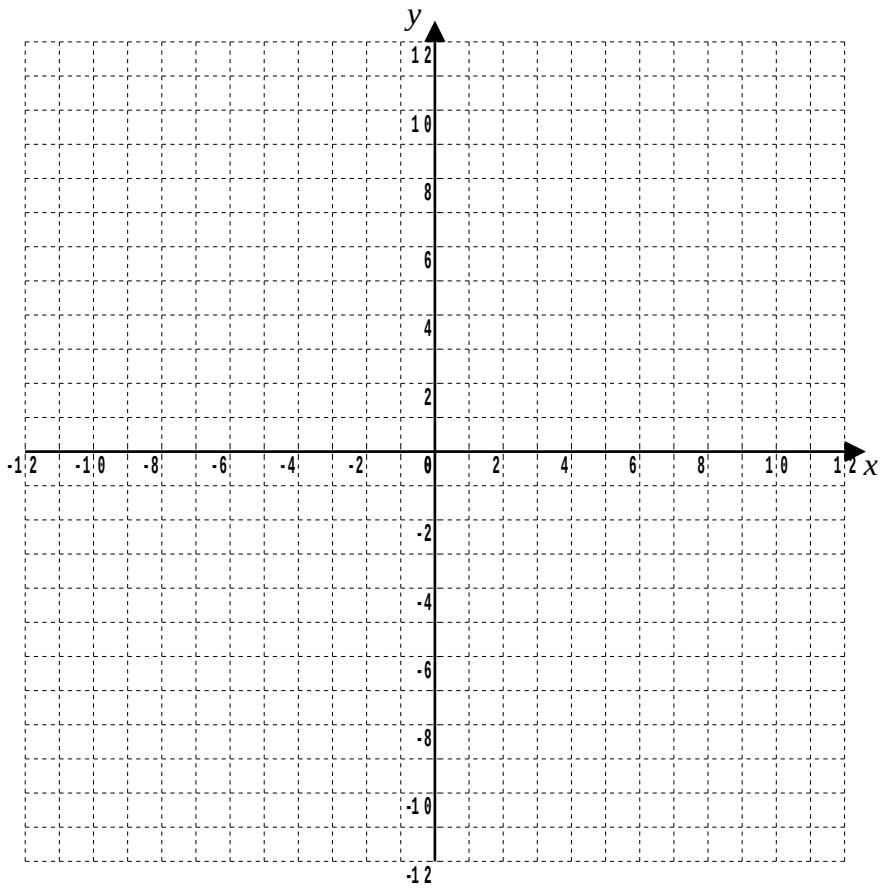
Question 4

(i) Plot the lines; $y = 6$ $y = -3$ $x = -10$ $x = -4$
Clearly show which equation goes with which line.

[6 marks]

(ii) Shade in the rectangle formed.

[2 marks]



Question 5

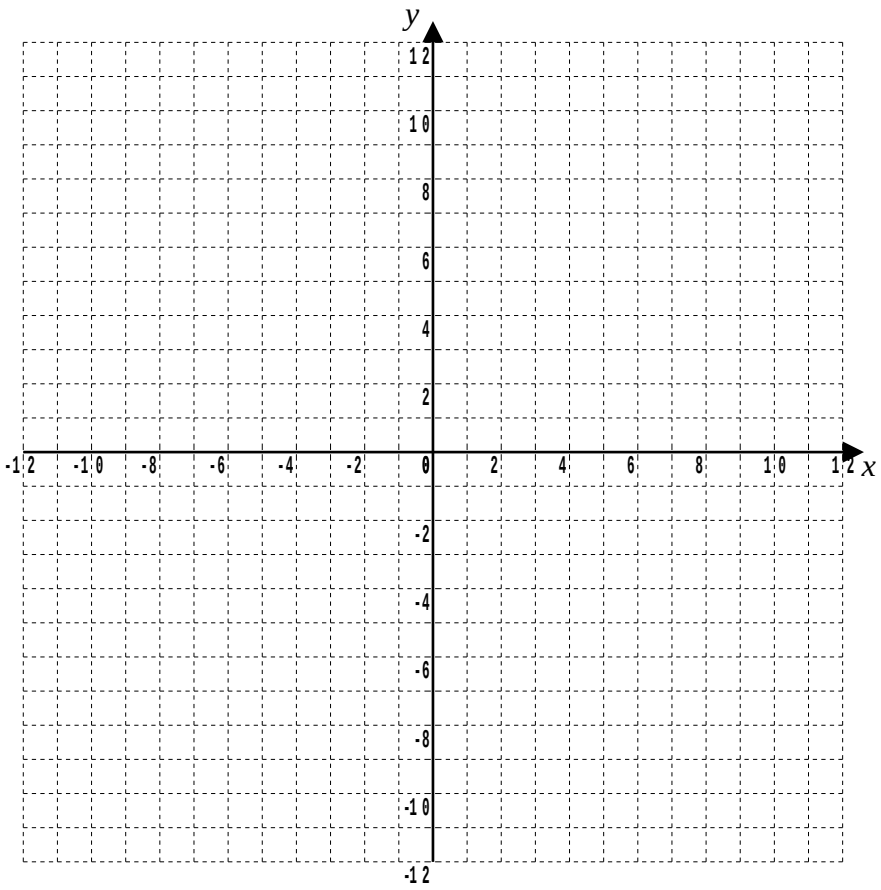
(i) Plot the lines; $y = 4x - 11$ $y = -\frac{1}{2}x + 7$ $y = -2x + 1$

Clearly show which equation goes with which line.

[6 marks]

(ii) Shade in the triangle formed.

[2 marks]



Question 6

Consider the graphs of the following six equations;

(a) $y = 14x - 72$ **(b)** $y = -35x + 72$ **(c)** $y = 72x + 70$

(d) $y = 67x$ **(e)** $y = x^2 + 5x + 6$ **(f)** $y = 14x + 72$

(i) Which graph is not a straight line ?

[1 mark]

(ii) Which graph slopes downwards at all points ?

[1 mark]

(iii) Which graph passes through the origin ?

[1 mark]

(iv) Which graph crosses the y-axis below the x-axis ?

[1 mark]

(v) Which straight line graph is the steepest ?

[1 mark]

(vi) Which two graphs are parallel ?

[1 mark]

(vii) Which two graphs pass through the same point on the y-axis ?

[1 mark]