Lesson 5

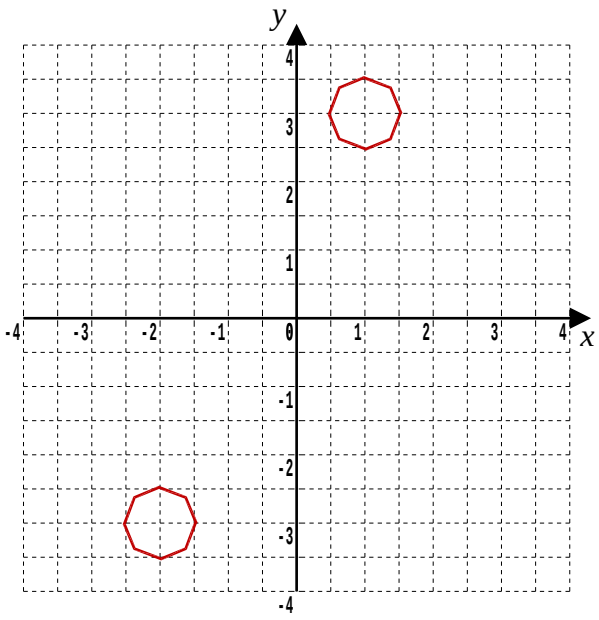
GCSE Mathematics
Graphworks

5.1 Revision

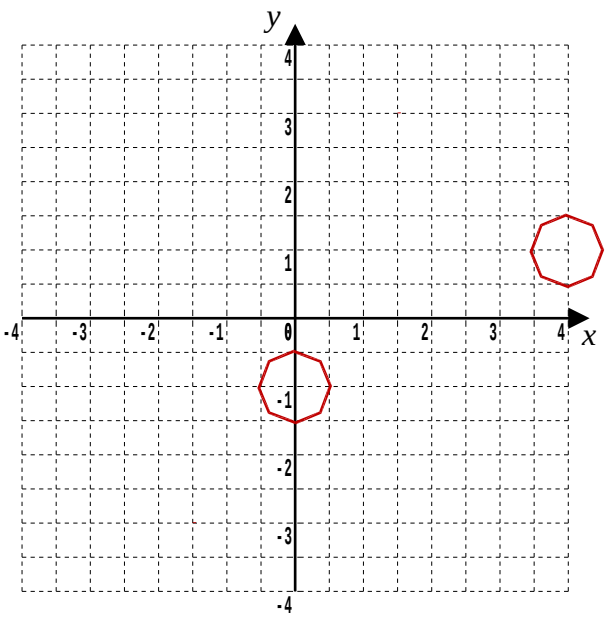
Marks Available : 60

Question 1

On each of the following graphs draw the line that passes through the two points at the centre of the two octagons. Underneath, write the equation of the line.

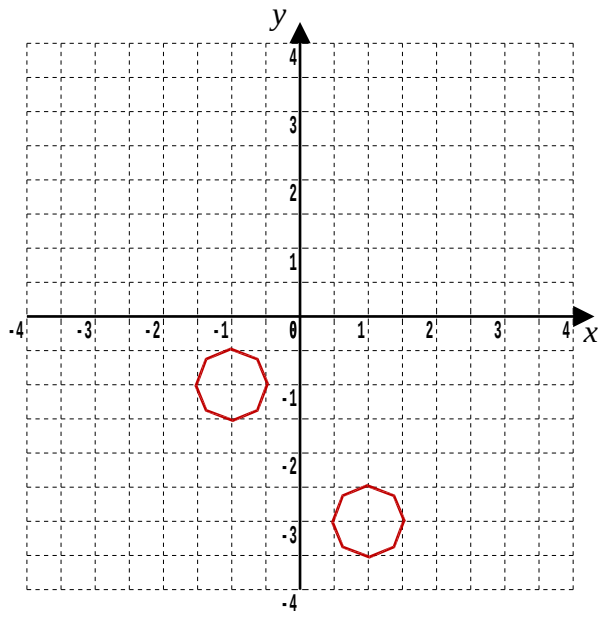


(i)

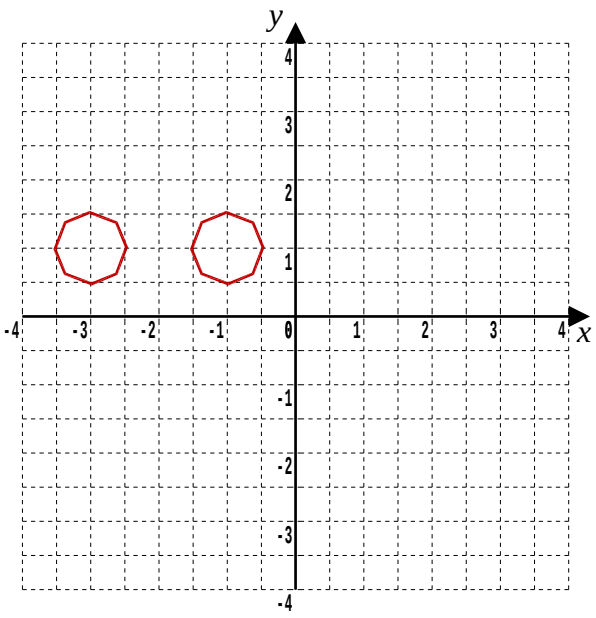


(ii)

[2, 2 marks]

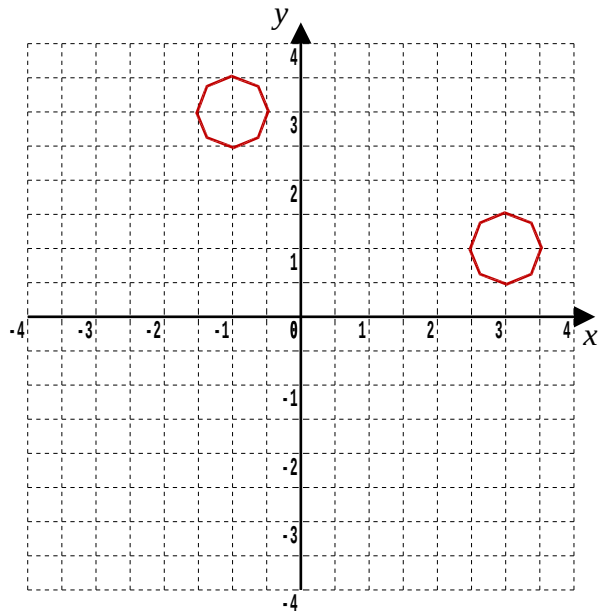


(iii)

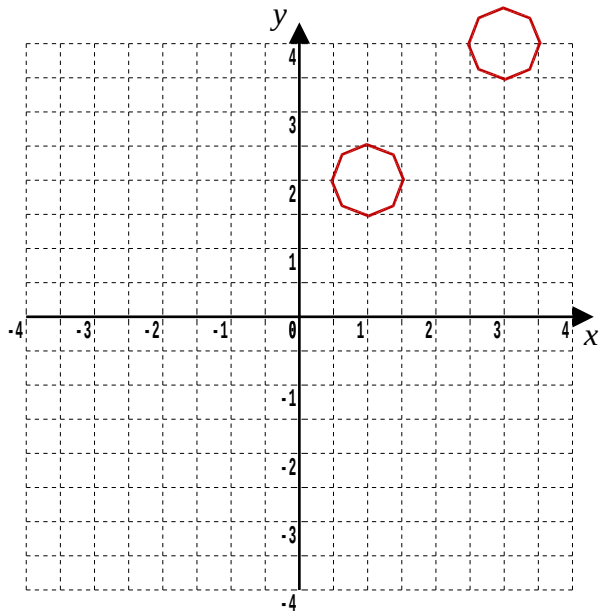


(iv)

[2, 2 marks]

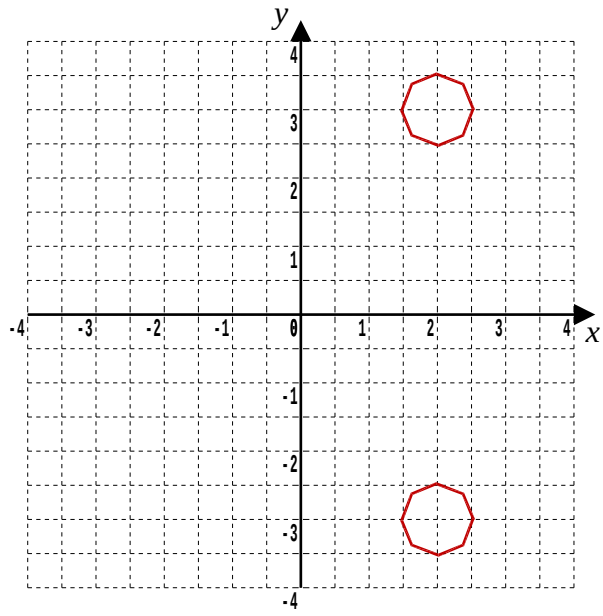


(v)

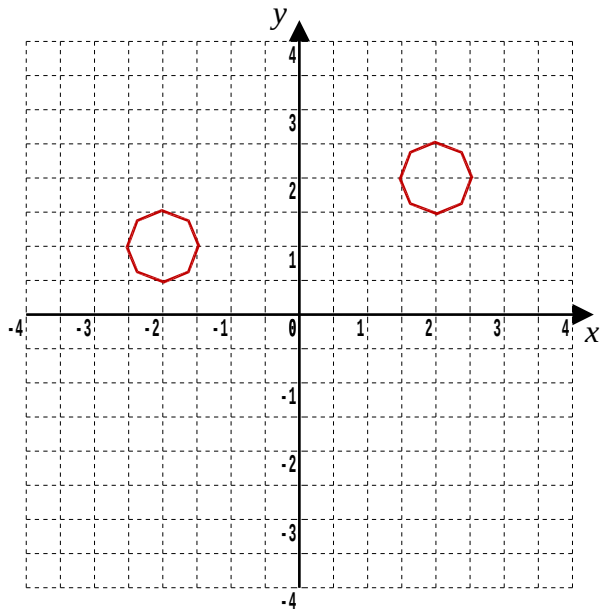


(vi)

[2, 2 marks]



(vii)



(viii)

[2, 2 marks]

Question 2

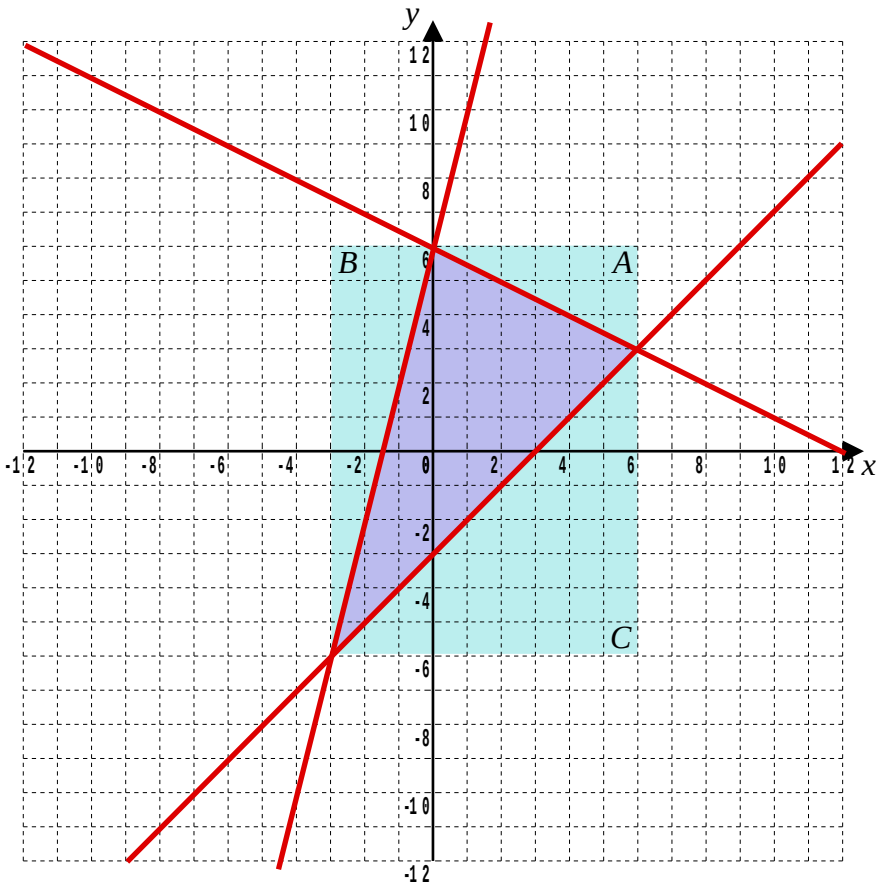
Write down the equation of a (different) line which is parallel to the line;

$$y = 14x + 27$$

[2 marks]

Question 3

(i) Next to each line, at a suitable place, clearly write the equation of the line.



[6 marks]

(ii) Calculate the area of triangle A.

[2 marks]

(iii) Calculate the area of triangle B.

[2 marks]

(iv) Calculate the area of triangle C.

[2 marks]

(v) Hence, or otherwise, determine the area of the triangle enclosed by the three lines.

[3 marks]

Question 4

(i) Plot the lines;

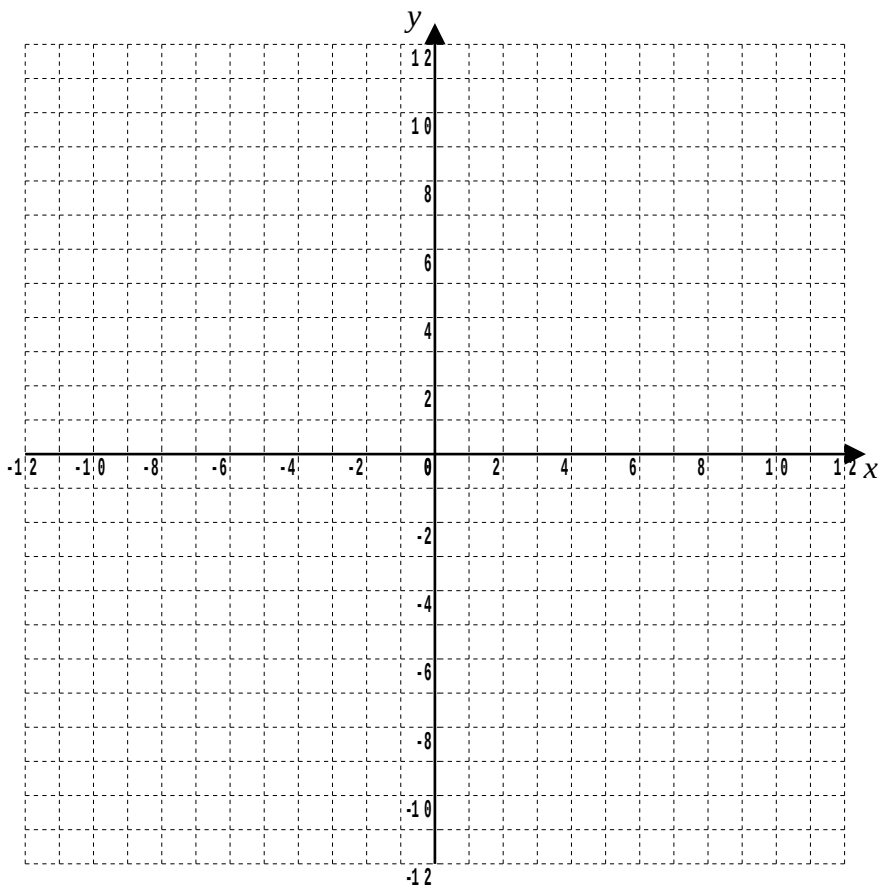
$$y = 2x - 5 \qquad y = -3x + 5 \qquad y = -\frac{1}{2}x + 10$$

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 5

Write down the equation of a different line that passes through the same point on the *y*-axis as the line;

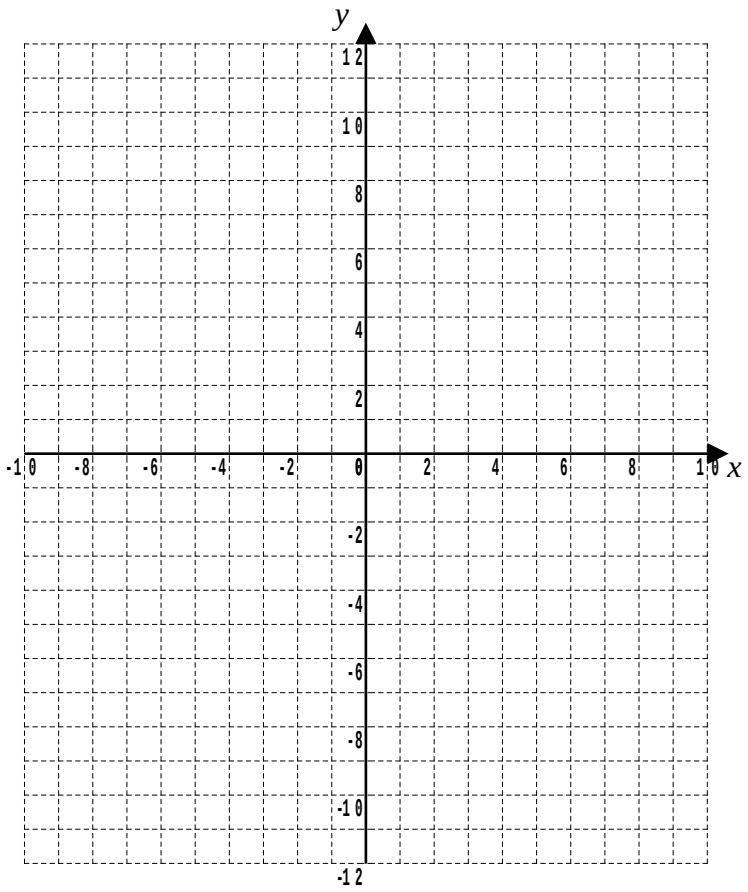
$$y = 23x + 19$$

[2 marks]

Question 6

Complete the following table and then plot the curve $y = x^2 - 5x - 4$

x	-2	-1	0	1	2	3	4	5	6	7
x^2										
$-5x$										
-4										
y										



[10 marks]

Question 7

Consider the graphs of the following six equations;

(a) $y = 3x + 15$ **(b)** $y = x^2 - 7x + 4$ **(c)** $y = -3x + 7$

(d) $y = -3x + 4$ **(e)** $y = 12x - 7$ **(f)** $y = x$

(i) Which graph is not a straight line ?

[1 mark]

(ii) Which graph slopes upwards at 45° ?

[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]