

If you are thinking of studying A-Level Maths the attached resources are a useful starting point to brush up on your Grade 7-9 Algebra from GCSE.

There are 3 "Gateway Ladders" aimed at giving practice on these skills.

If you come across a particular topic you struggle with , I would then suggest you use Hegarty or Youtube to find a video which will go over the relevant topic.

PiXL
Gateway



Climb Higher

Question A(3)

Simplify the following

(a) $3j - 7j + 3j$

.....
(1)

(b) $5i^2 - 3i^2$

.....
(1)

(c) $4 + 6y - 3s - 5y + 2s$

.....
(1)

(d) $5a \times 2b \times 4$

.....
(1)

(e) $2n^3 \times 9n^7$

.....
(1)

(f) Solve $31 = 6x - 11$

.....
(1)

(g) Expand $h(3h + 8)$

.....
(1)

(h) Factorise $121 + 22j$

.....
(1)

(i) $m = n^2 - 7p$

$n = 3$ $p = 4$

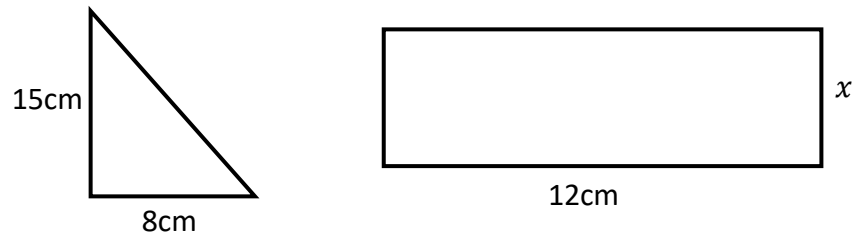
Work out the value of m

.....
(2)

Total = $\frac{\quad}{10}$

Question B(3)

(a) Here are a triangle and a rectangle.



The area of the rectangle is 3 times the area of the triangle.
Work out the value of x .

.....
(3)

(b) Make b the subject $\frac{11a-13}{3b} = 12$

.....
(2)

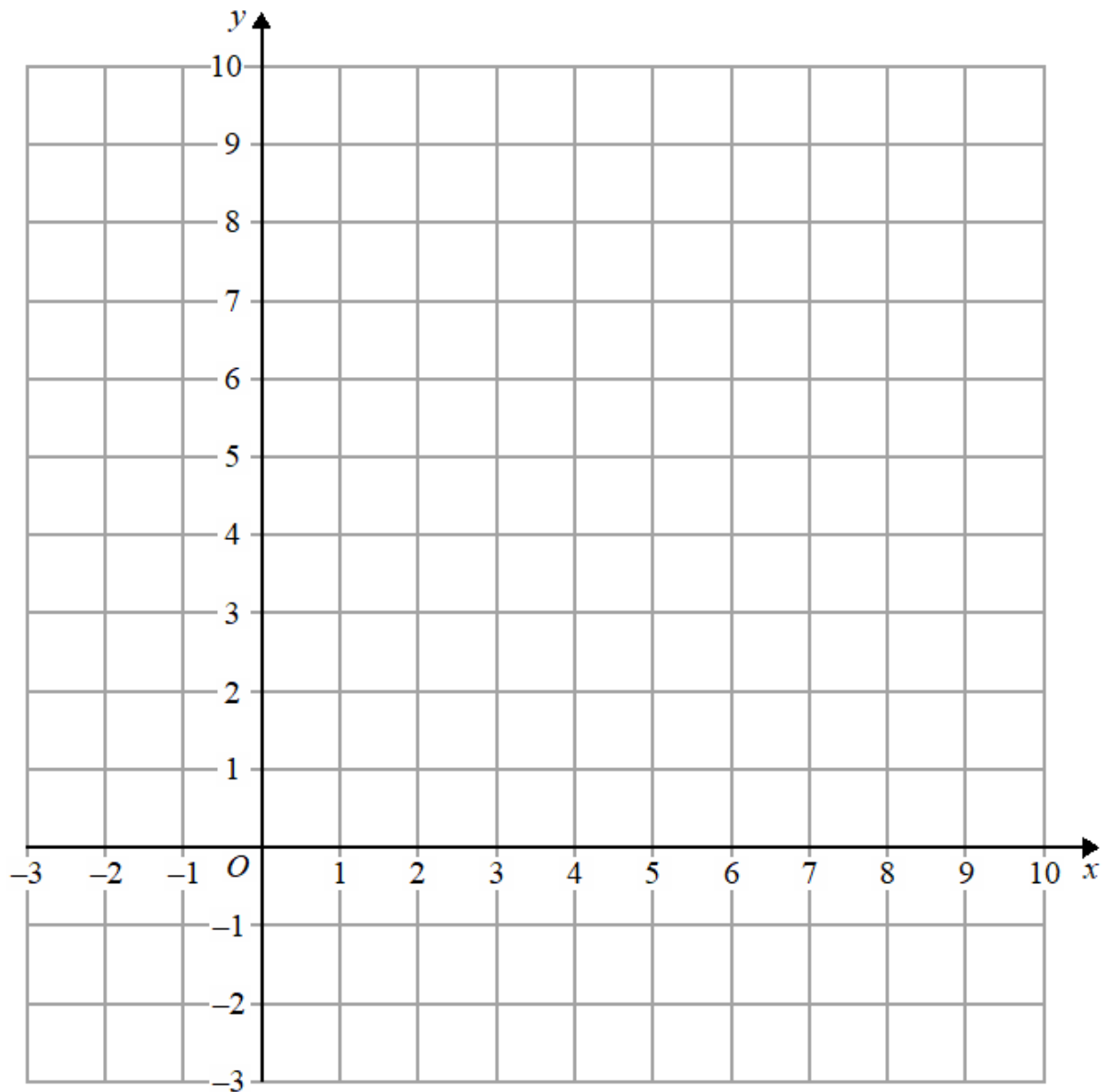
(c) $d = \frac{7c-2b}{3c}$

$c = -1$ $b = -5$

Work out the value of d

.....
(2)

(d) On the grid below draw the graph of $y = -2$, $x = 3$ and $y = x$



(3)

Total = $\frac{\quad}{10}$

Question C(3)

(a) Factorise $24p^2j^4 - 48p^5j^3$

.....
(2)

(b) Solve $6(x - 7) = 3$

.....
(2)

(c) Expand $(2x - 3)(x - 1)$

.....
(2)

(d) Solve the inequality $11 - 4x \leq 19$

.....
(2)

(e) Find the n^{th} term of the following sequence

14 18 22 26 30

.....
(2)

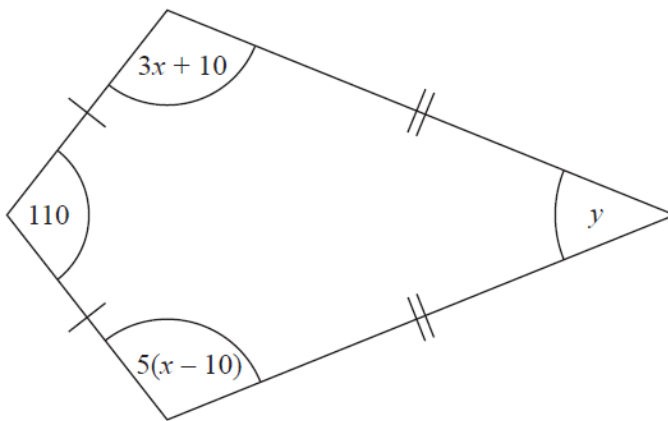
Total = $\frac{\quad}{10}$

Question D(3)

(a) Solve $x^2 - 11x + 28 = 0$

.....
(3)

(b) Here is a kite.



All angles are measured in degrees.

Work out the value of y .

.....
(4)

(c) Solve the simultaneous equations

$$2x + 4y = 17$$

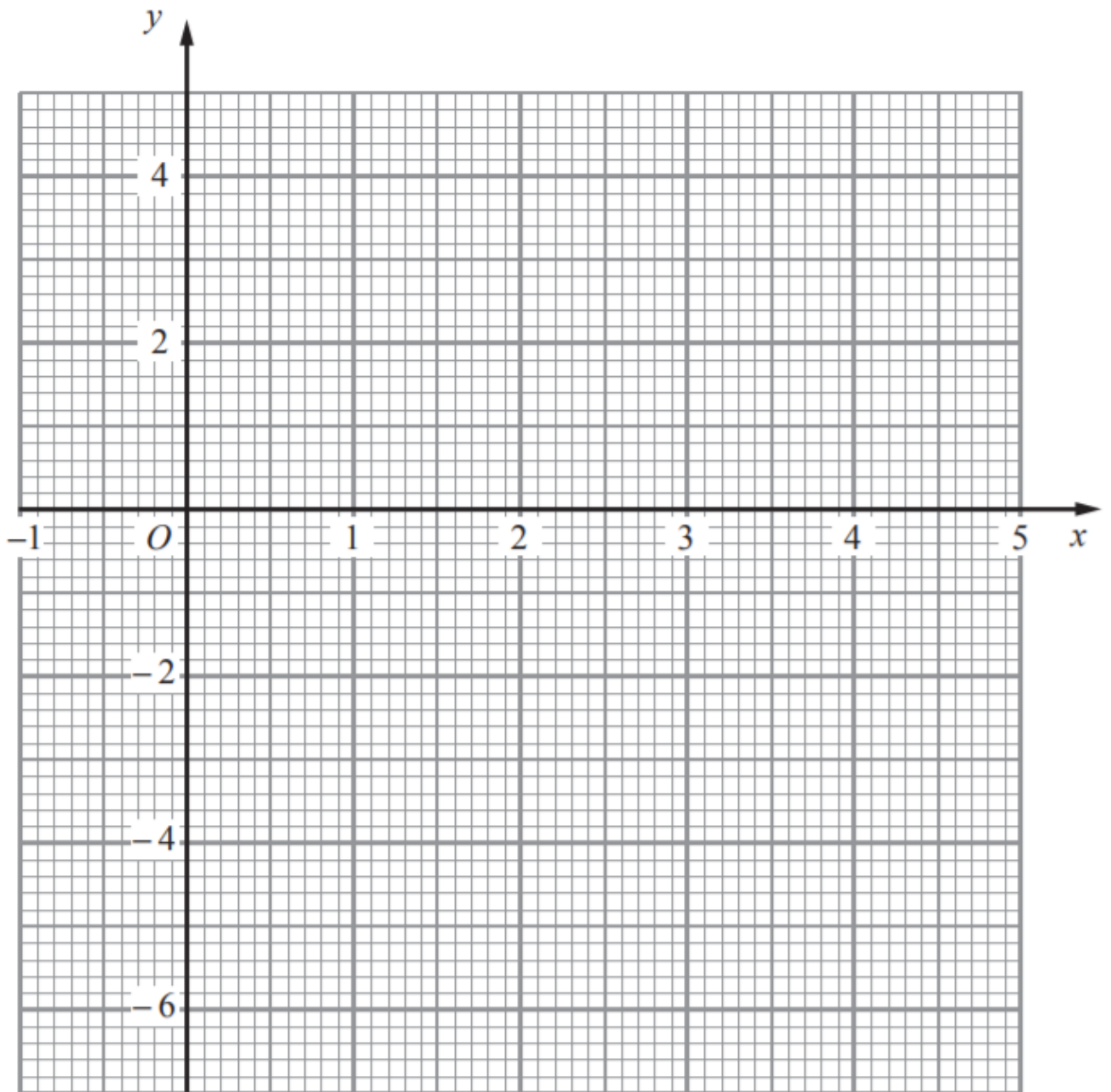
$$6x - 2y = 2$$

.....
(3)

Total = $\frac{\quad}{10}$

Question E(3)

(a) (i) On the grid below, draw the graph of $y = x^2 - 4x - 2$ for values of x from -1 to 5 .



(4)

(iii) Use your graph to estimate the values of x when $y = -3$.

.....

(2)

(b) A line has equation $2y = 3x + 4$

(i) Find the gradient of the line.

.....
(1)

(ii) Write down the y intercept of the line.

.....
(1)

(iii) The equation of line L_1 is $y = 4x + 15$

The equation of line L_2 is $5y - 20x + 11 = 0$

Show that these two lines are parallel.

.....
(2)

Total = $\frac{\quad}{10}$