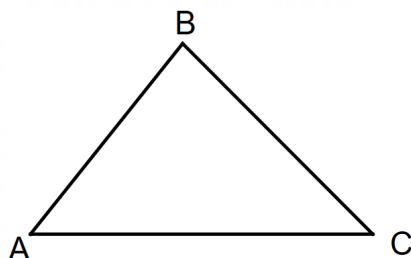




GEOMETRY OF 2D SHAPES

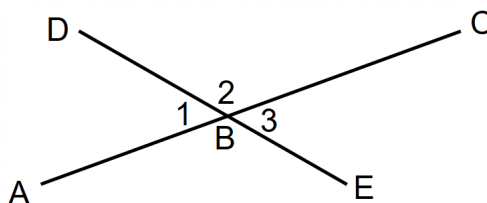
(a) Complete the tables below by writing down the reasons for the given statements:

(1)



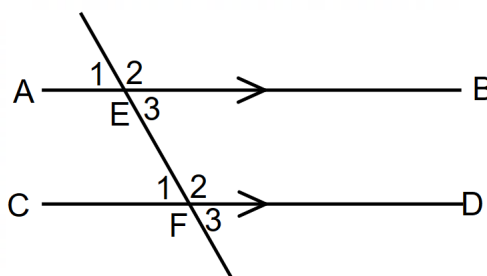
Statement	Reason
$\hat{A} + \hat{B} + \hat{C} = 180^\circ$	

(2)



Statement	Reason
$\hat{B}_1 = \hat{B}_3$	

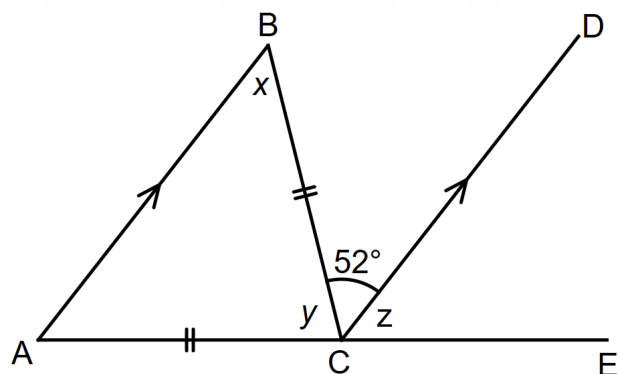
(3)



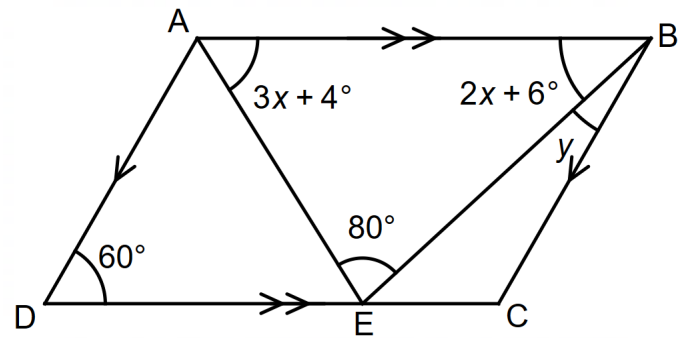
Statement	Reason
$\hat{E}_3 = \hat{F}_3$	

(b) Calculate the values of x , y and z in the following diagrams, stating your reasons:

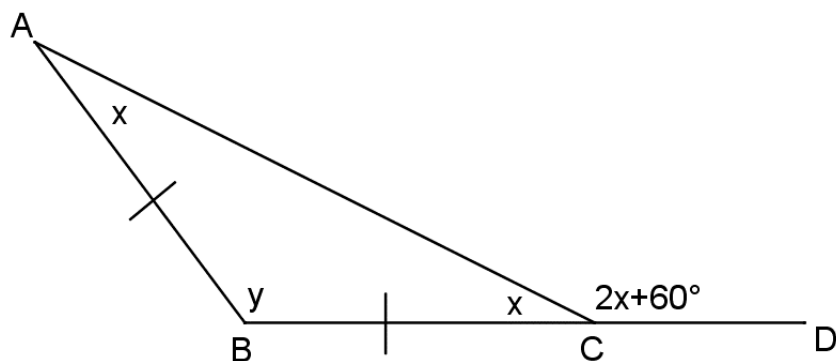
(1) Given: $AB \parallel CD$ and $AC = BC$

[illegible]

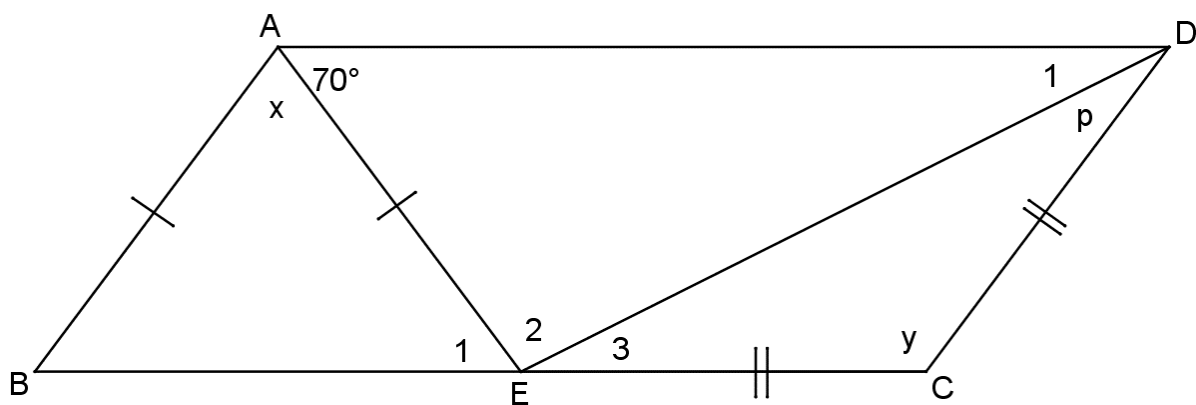
(2) Given: ABCD is a parallelogram.

[illegible]

- (a) In the diagram below $AB = BC$. Determine the values of x and y , with reasons. (5)



- (b) **ABCD is a parallelogram.** $AB = AE$ and $EC = DC$.



Determine, with reasons, the values of x , y and p .

ALGEBRA

Find the product and simplify the following:

(a) $(3x - 2)(2x + 3)$

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

(c) $(5x - 2)(5x + 2) - (x - 5)(-3)$

(d) $(x - 3)(2x + 5)$

(e) $2(p - 3)^2$

(f) $4(x^2 - 2) - (x - 3)(x + 3)$

Simplify the following, leaving with positive exponents where applicable:

(a) $(-3x^4)(2x^3)$

(b) $2(x^2y^{-1})^3$

(c) $\frac{-10a^8b^{-3}c}{-15a^6b^2c^{-1}}$

(d) $\frac{(-2x^2y^3)^2 \times 3x^5y^0}{\sqrt{16x^8}}$

(e) $\frac{4p^0 + 3}{(4p)^0 - 2}$

(f) $\frac{(-2p^3q^2)^4}{4p^2q^{-6}}$

Factorise the following fully:

(a) $12a^3b - 6a^2c + 24ab^3c^2$

(b) $a^2 - 11a + 30$

(c) $4a(1 - a) - 3(a - 1)$

(d) $81x^6 - 16y^8$

(e) $-5x^2y + 25xy + 120y$

(f) $x^2 + 5x - 14$

(g) $2x(c - d) - (d - c)$

Simplify:

$$\frac{x^2 - 2x - 8}{x^2 - 4x} \div \frac{x^2 - 4}{2x - 4}$$

Solve for x in each of the following:

(a) $3x + 6 = 9 - 2(x - 1)$

(b) $3^{x+2} = 81^{x-1}$

(c) $(x + 3)(x - 2) = 14$

(d) $\frac{x+1}{3} - \frac{2x-1}{5} = 2$

(e) $3x - 4(x - 2) = 6x + 13$

(f) $3.5^{x-2} = 375$

(g) $(x - 7)(x + 3) = 24$

GRAPHS

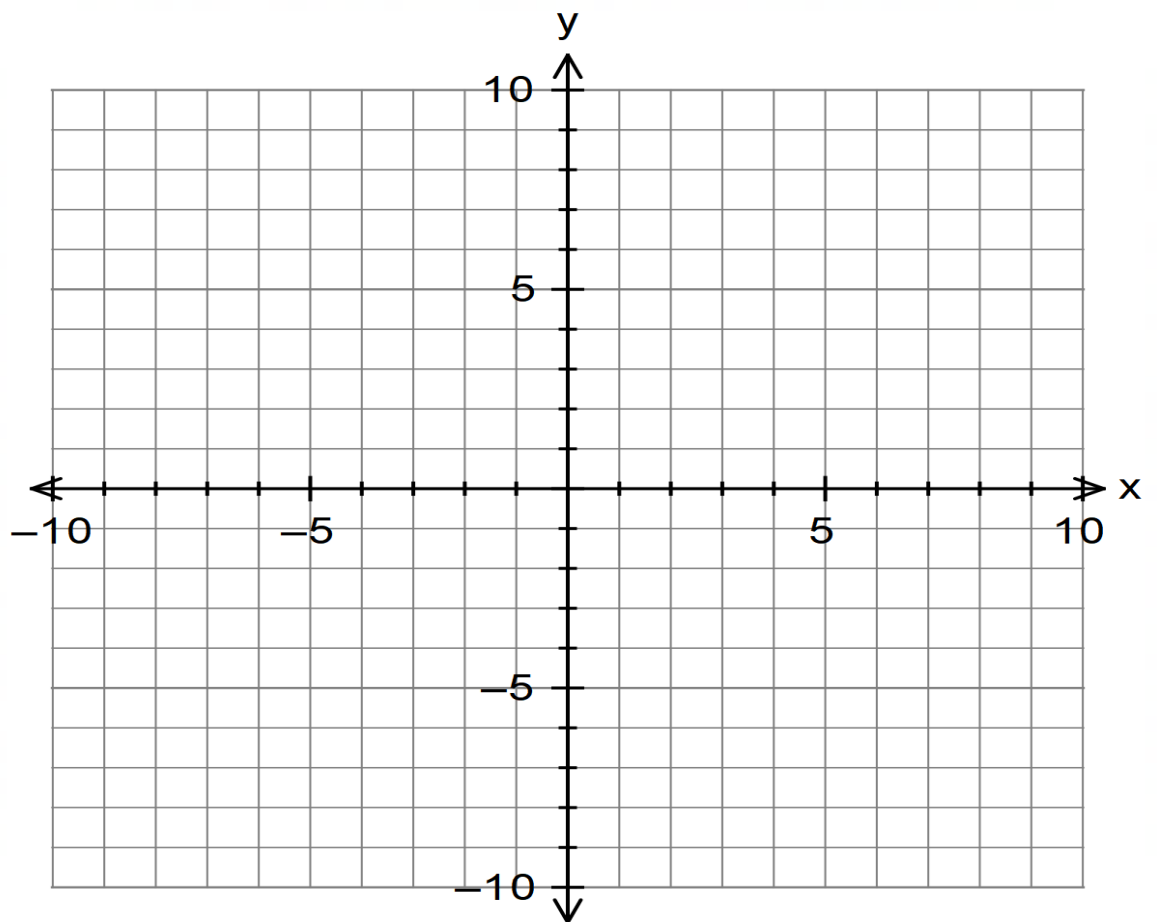
$$m = \frac{y_2 - y_1}{x_2 - x_1} \quad y = mx + c$$

(a) Given the equation of a straight line, $2y + 4x = 6$:

(1) Complete the table which represents the equation above.

x	-1	0		2
y			1	-1

(2) On the Cartesian plane below, draw the graph of $2y + 4x = 6$, showing all intercepts with the axes.

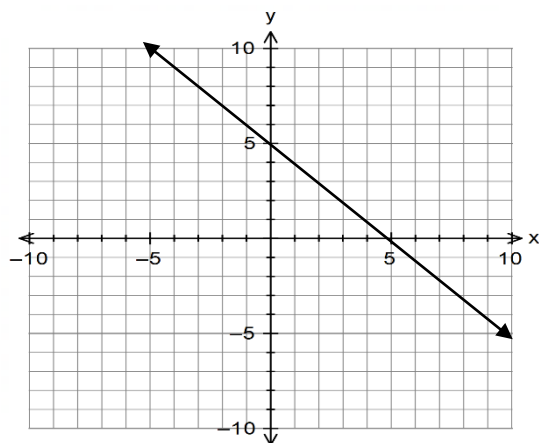


(b) Determine the equation (rule) of each of the following:

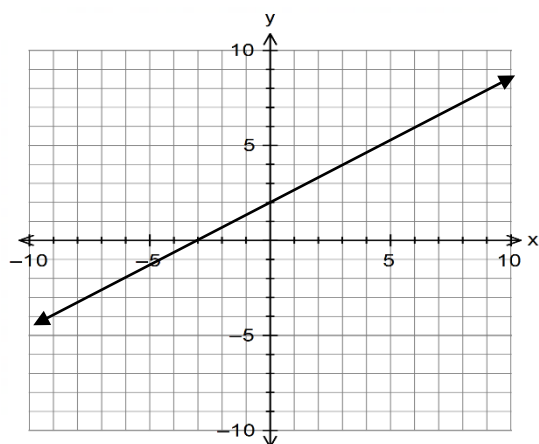
(1)

x	-6	-4	0	2	4
y	-5	-4	-2	-1	0

(2)



(3)



(4)

The x – axis

- a) Match each of the graphs plotted below with its corresponding equation from the following table. Write the letter below the graph.

A	$y = -x$	E	$y = 2x + 3$
B	$x = -2$	F	$y = x + 1$
C	$y = x - 1$	G	$y = -2$
D	$y = -x + 1$	H	$y = -\frac{3}{2}x + 3$

