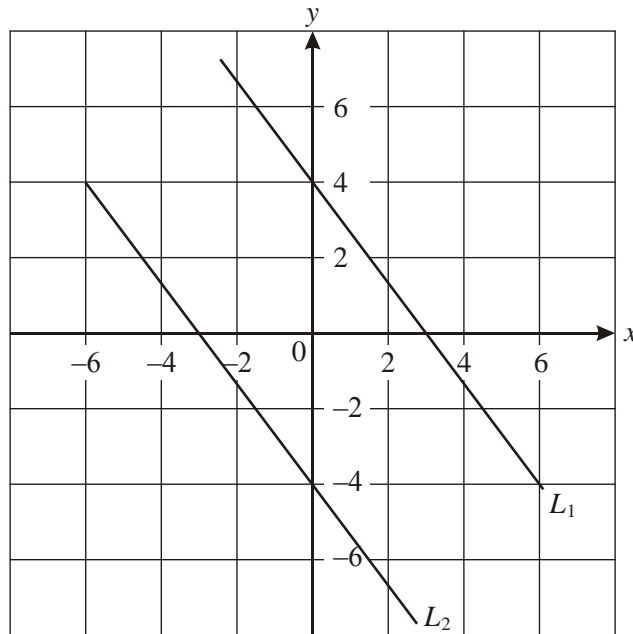




Name: _____

Answer the following questions :-

1. In the diagram, the lines L_1 and L_2 are parallel.



- (a) What is the gradient of L_1 ? (b) Write down the equation of L_1 .
 (c) Write down the equation of L_2 in the form $ax + by + c = 0$.

2. The gradients of several lines are as follows:

Line	a	b	c	d	e	f	g	h
Gradient	-3	$\frac{-5}{2}$	$\frac{1}{3}$	0.5	$\frac{3}{6}$	$\frac{-2}{5}$	$\frac{5}{-2}$	0.4

- (a) Find two pairs of lines that are parallel to each other.
 (b) Find any two pairs of lines that are at right angles to each other.

3. Vanessa wants to rent a place for her wedding reception. She obtains two quotations.

- (a) The local council will charge her £30 for the use of the community hall plus £10 per guest.



- (i) **Copy** and complete this table for charges made by the local council.

Number of guests (N)	10	30	50	70	90
Charges (C) in £					

- (ii) On graph paper, using suitable scales, draw and label a graph showing the charges. Take the horizontal axis as the number of guests and the vertical axis as the charges.
- (iii) Write a formula for C , in terms N , that can be used by the local council to calculate their charges.
- (b) The local hotel calculates charges for their conference room using the formula:

$$C = \frac{5N}{2} + 500$$

where C is the charge in £ and N is the number of guests.

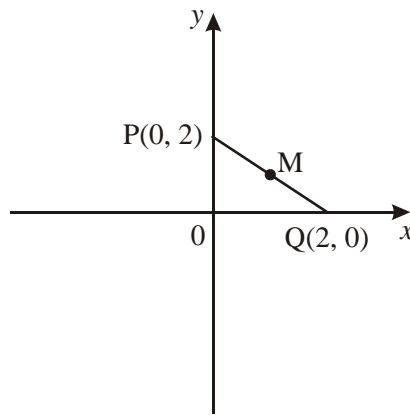
- (i) Describe, **in words only**, what this formula means.
- (ii) **Copy** and complete this table for the charges made by the hotel.

Number of guests (N)	0	20	40	80
Charges (C) in £				

- (iii) On the same axes used in part (a)(ii), draw this graph of C . Label your graph clearly.
- (c) Explain, briefly, what the two graphs tell you about the charges made.
- (d) Using your graphs or otherwise, find
- the cost of renting the community hall if there are 87 guests;
 - the number of guests if the hotel charges £650;
 - the difference in charges between the council and the hotel if there are 82 guests at the reception.

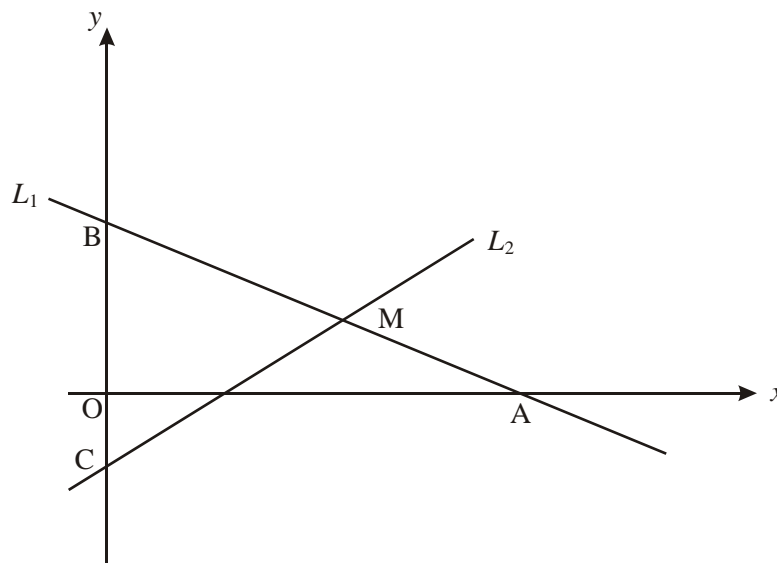
4. The following diagram shows the points P, Q and M. M is the midpoint of [PQ].

- Write down the equation of the line (PQ).
- Write down the equation of the line through M which is perpendicular to the line (PQ).



5. The line L_1 shown on the set of axes below has equation $3x + 4y = 24$. L_1 cuts the x -axis at A and cuts the y -axis at B.

Diagram not drawn to scale



- (a) Write down the coordinates of A and B.

M is the midpoint of the line segment [AB].

- (b) Write down the coordinates of M.

The line L_2 passes through the point M and the point C (0, -2).

- (c) Write down the equation of L_2 .

- (d) Find the length of

- (i) MC; (ii) AC.