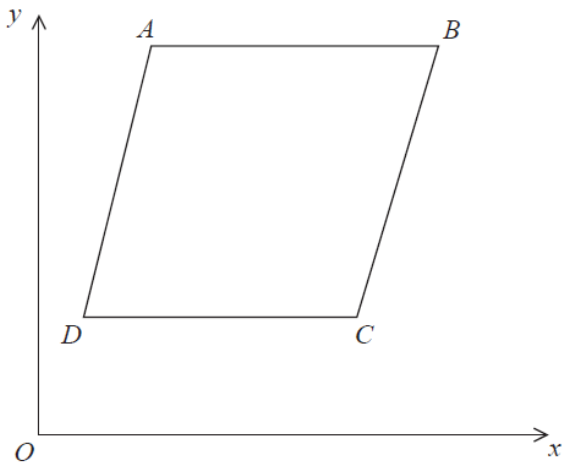
1 The equation of the line L_1 is $y = 3x - 2$
The equation of the line L_2 is $3y - 9x + 5 = 0$

Show that these two lines are parallel.

(Total for Question is 2 marks)

2



$ABCD$ is a rhombus.
The coordinates of A are $(5, 11)$
The equation of the diagonal DB is $y = \frac{1}{2}x + 6$

Find an equation of the diagonal AC.

.....

(Total for Question is 4 marks)

3 **L** is the circle with equation $x^2 + y^2 = 4$

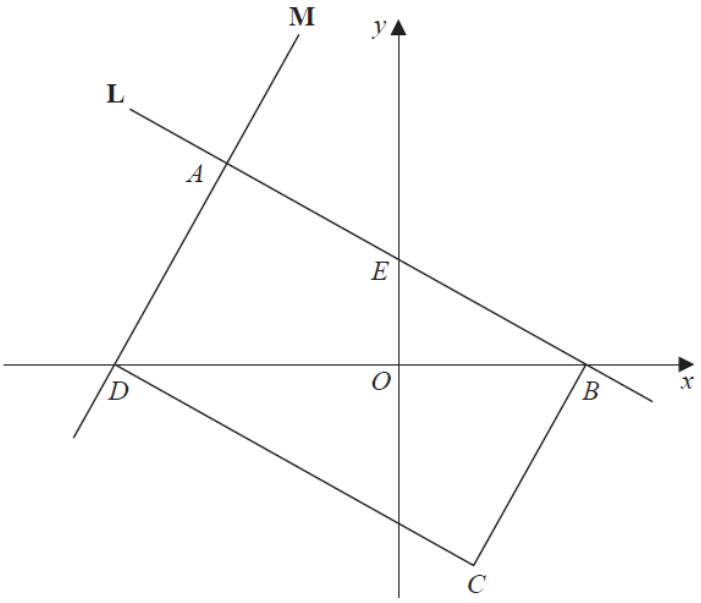
$P\left(\frac{3}{2}, \frac{\sqrt{7}}{2}\right)$ is a point on **L**.

Find an equation of the tangent to **L** at the point P.

.....

(Total for Question is 3 marks)

4



ABCD is a rectangle.

A, *E* and *B* are points on the straight line **L** with equation $x + 2y = 12$
A and *D* are points on the straight line **M**.

$AE = EB$

Find an equation for **M**.

.....

(Total for Question is 4 marks)

5 The straight line **L** has the equation $3y = 4x + 7$
The point A has coordinates $(3, -5)$

Find an equation of the straight line that is perpendicular to **L** and passes through A.

.....

(Total for Question is 3 marks)

6 The straight line **L** has equation $3x + 2y = 17$

The point A has coordinates $(0, 2)$
The straight line **M** is perpendicular to **L** and passes through A.

Line **L** crosses the y-axis at the point B.
Lines **L** and **M** intersect at the point C.

Work out the area of triangle ABC.
You must show all your working.

.....

(Total for Question is 5 marks)

7 The straight line L_1 has equation $y = 3x - 4$
The straight line L_2 is perpendicular to L_1 and passes through the point $(9, 5)$

Find an equation of line L_2

.....

(Total for Question is 3 marks)