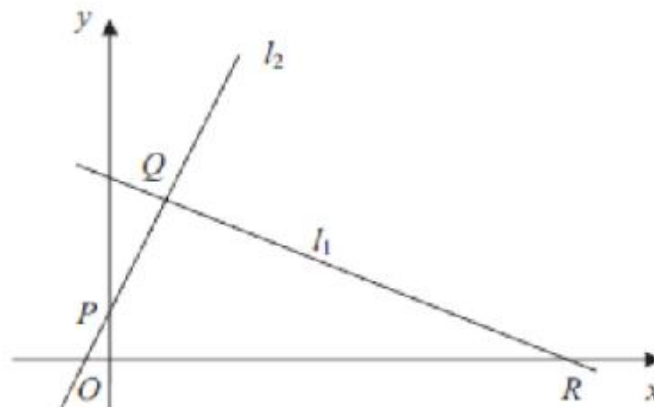1.

Figure 2

The points Q $(2, 4)$ and R $(8, 0)$ lie on the line l_1, as shown in Figure 2.

(a) Find the length of QR .

(3)

The line l_2 is perpendicular to l_1, passes through Q and crosses the y-axis at the point P, as shown in Figure 2.

Find

(b) an equation for l_2,

(5)

(c) the coordinates of P,

(1)

(d) the area of ΔPQR.

(4)

2.

A circle with centre C has equation $(x + 3)^2 + (y - 2)^2 = 25$.

(a) Write down:

    (i) the coordinates of C;   *(2 marks)*

    (ii) the radius of the circle.   *(1 mark)*

(b) Find the coordinates of the points where the circle crosses the x-axis.

Give your answers in simplified surd form.

(2 marks)

(c) The point N (0, -2) lies on the circle.

Find the equation of the tangent to the circle at the point N.

(4 marks)

- End of Test -