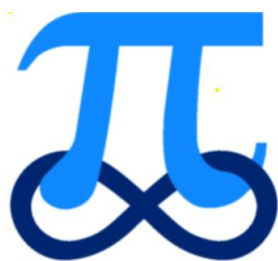


*KumarMaths*

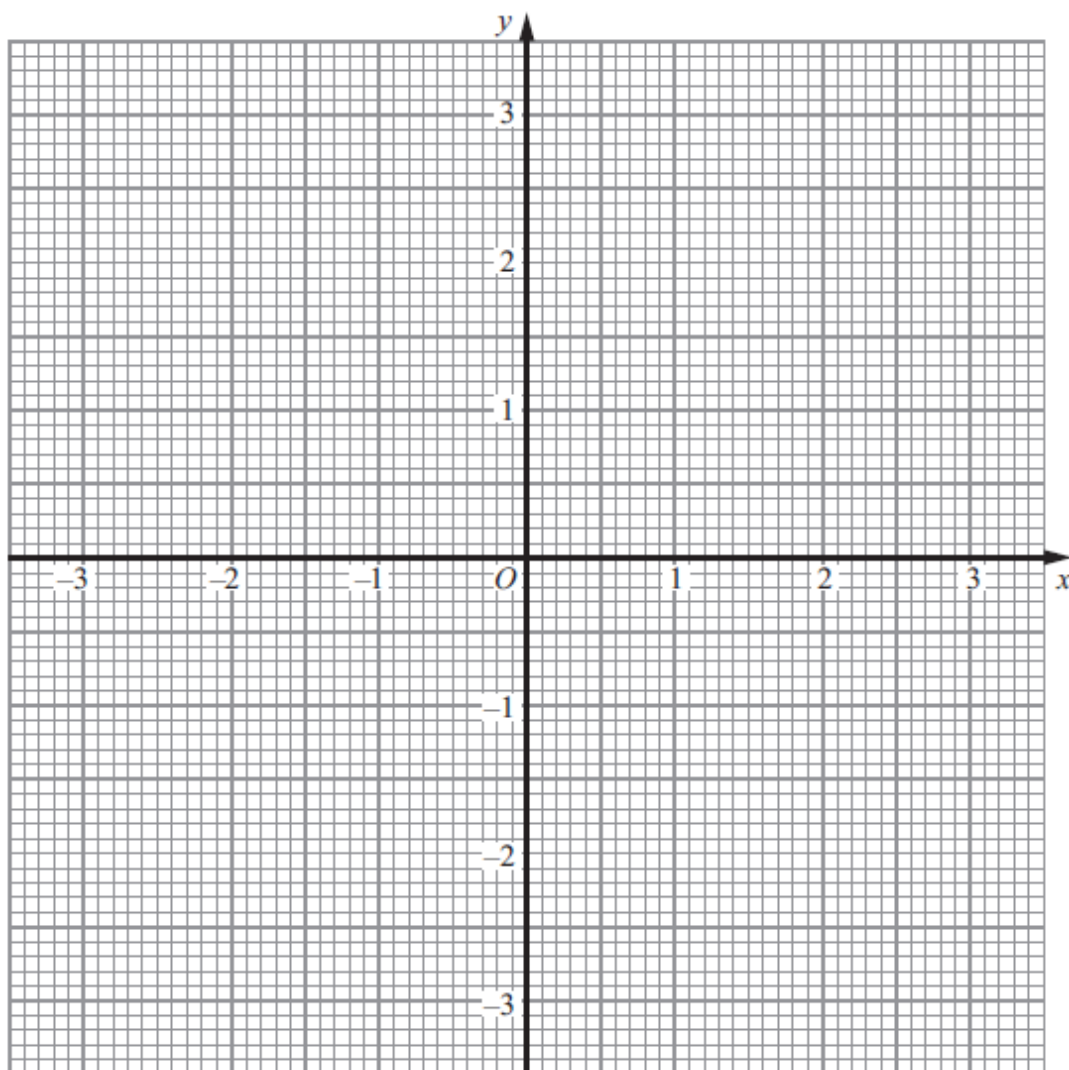
Pearson Edexcel

GCSE Maths (9 – 1)

Past Exam Questions by  
Topics: Coordinate  
Geometry - Circle.



1. (a) Construct the graph of  $x^2 + y^2 = 9$



(2)

- (b) By drawing the line  $x + y = 1$  on the grid, solve the equations  $x^2 + y^2 = 9$

$$x + y = 1$$

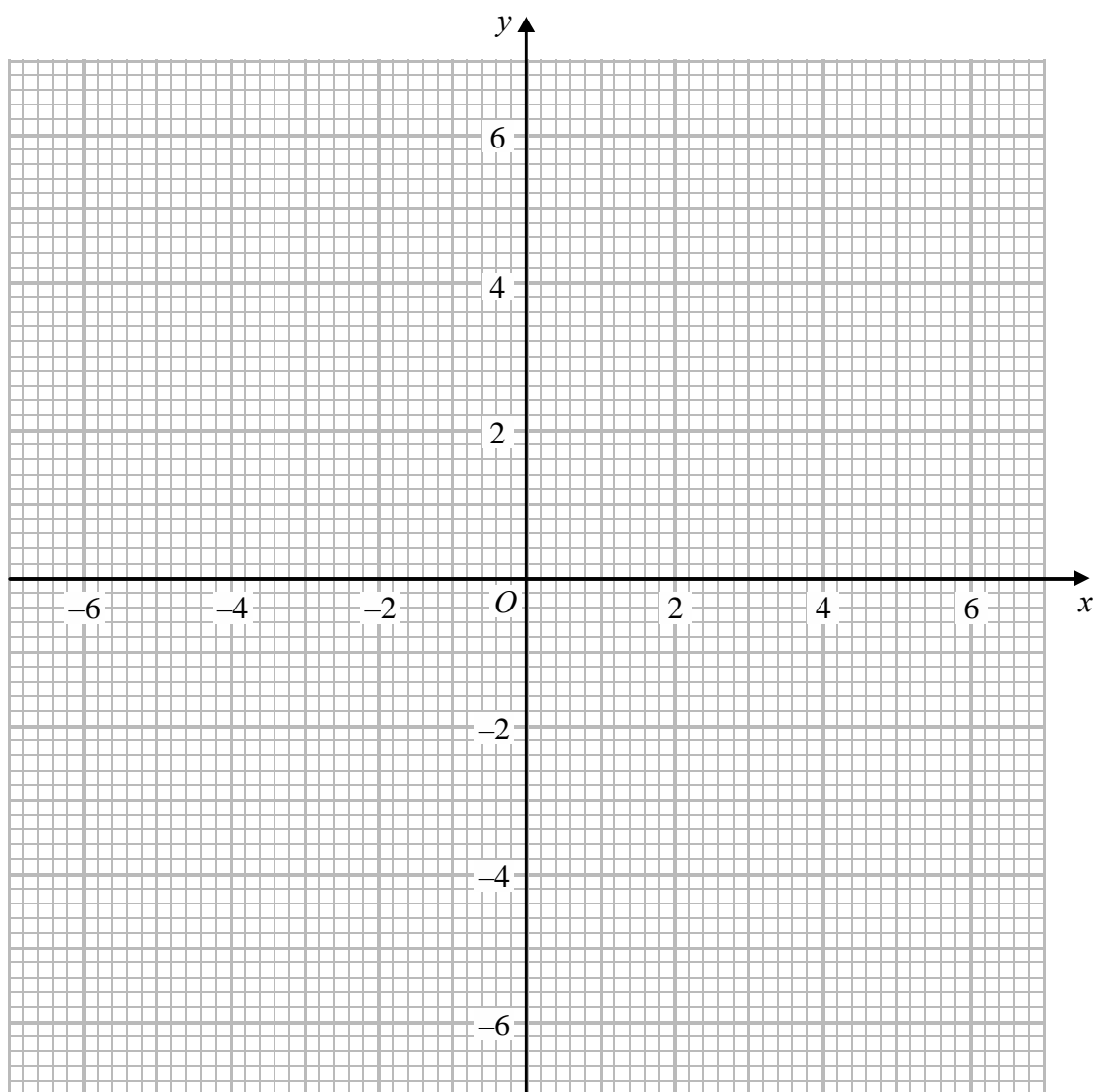
$x = \dots\dots\dots$  ,  $y = \dots\dots\dots$

or  $x = \dots\dots\dots$  ,  $y = \dots\dots\dots$

(3)

(5 marks)

2. (a) On the grid, draw the graph of  $x^2 + y^2 = 12.25$



(2)

- (b) Hence find estimates for the solutions of the simultaneous equations

$$x^2 + y^2 = 12.25$$

$$2x + y = 1$$

(3)

( 5 marks)

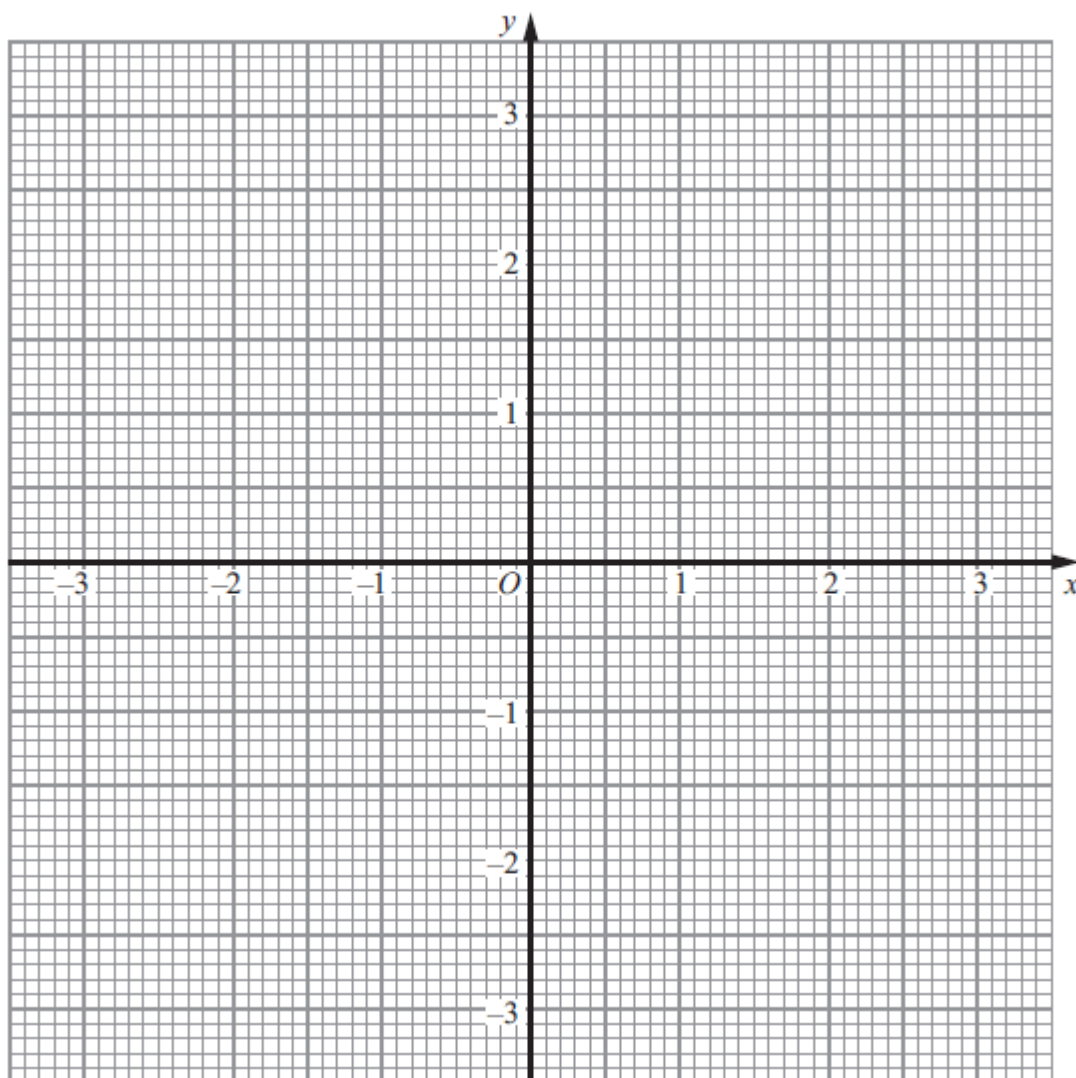
3.. The line **L** is a tangent to the circle  $x^2 + y^2 = 45$  at the point  $(-3, 6)$ .

The line **L** crosses the  $x$ -axis at the point  $P$ .

Work out the coordinates of  $P$ .

.....  
(4 marks)

5. (a) Construct the graph of  $x^2 + y^2 = 9$



(2)

- (b) By drawing the line  $x + y = 1$  on the grid, solve the equations  $x^2 + y^2 = 9$

$$x + y = 1$$

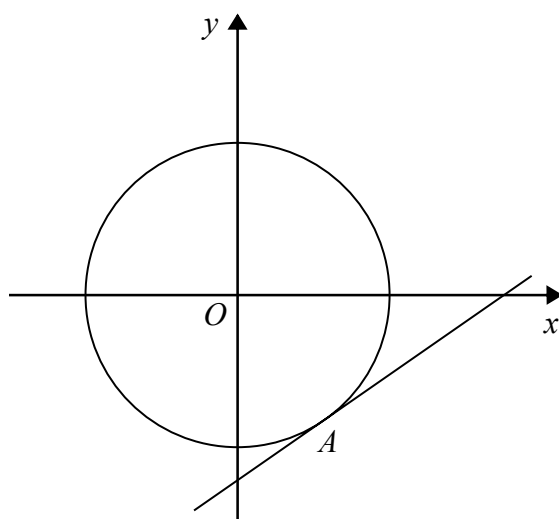
$x = \dots\dots\dots$  ,  $y = \dots\dots\dots$

or  $x = \dots\dots\dots$  ,  $y = \dots\dots\dots$

(3)

(5 marks)

6. The diagram shows the circle with equation  $x^2 + y^2 = 261$

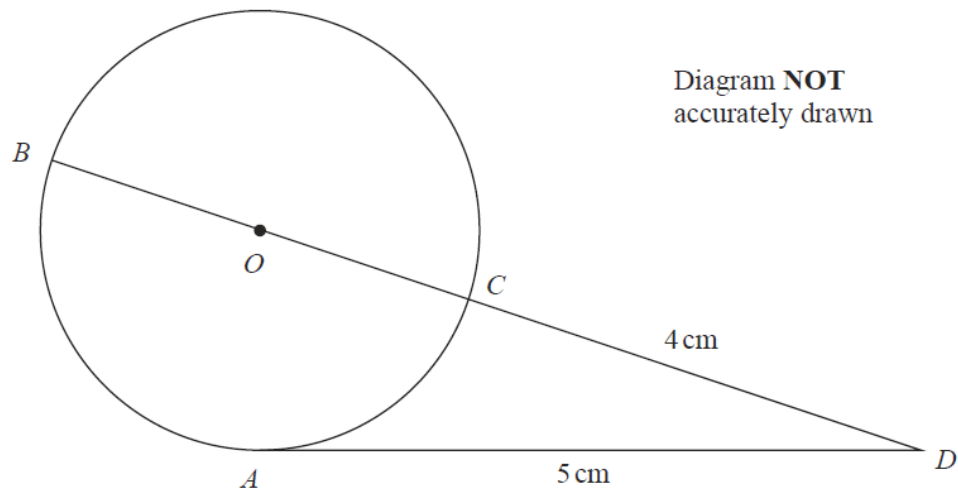


A tangent to the circle is drawn at point  $A$  with coordinates  $(p, -15)$ , where  $p > 0$

Find an equation of the tangent at  $A$ .

.....  
(5 marks)

7.



$A$ ,  $B$  and  $C$  are three points on a circle, with centre  $O$ , as shown in the diagram.

$BC$  is a diameter of the circle.

The point  $D$  is such that  $BOCD$  is a straight line and  $AD$  is the tangent to the circle at  $A$ .

$AD = 5$  cm and  $CD = 4$  cm.

Calculate the radius, in cm, of the circle.

(5 marks)

8. The line  $l$  is a tangent to the circle  $x^2 + y^2 = 40$  at the point  $A$ .

$A$  is the point  $(2, 6)$ .

The line  $l$  crosses the  $x$ -axis at the point  $P$ .

Work out the area of triangle  $OAP$ .

(5 marks)

9. The line  $l$  is a tangent to the circle  $x^2 + y^2 = 40$  at the point  $A$ .

$A$  is the point  $(2, 6)$ .

The line  $l$  crosses the  $x$ -axis at the point  $P$ .

A radius is drawn from the origin,  $O$ , to point  $A$ .

- (a) Draw a sketch to show this information.

(1)

- (b) Find the gradient of  $OA$ .

.....

(1)

- (c) Find the gradient of line  $l$ .

.....

- (d) Find the equation of line  $l$ .

.....

(2)

- (e) Find the point at which line  $l$  intercepts the  $x$ -axis.

.....

(1)

- (f) Work out the area of triangle  $OAP$ .

.....

(2)

(7 marks)

**10.** **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  $P$ .

.....  
(3 marks)