## The Circle (Q 3, Paper 2)

## Lesson No. 1: The Simple Circle

## 2007

3 (a) The circle $C$ has centre $(0,0)$ and radius 4.
(i) Write down the equation of $C$.
(ii) Verify that the point $(3,2)$ lies inside the circle $C$.

## 2005

3 (a) The circle $C$ has equation $x^{2}+y^{2}=49$.
(i) Write down the centre and the radius of $C$.
(ii) Verify that the point $(5,-5)$ lies outside the circle $C$.

2004
3 (a) The circle $C$ has equation $x^{2}+y^{2}=36$.
(i) Write down the radius of $C$.
(ii) The radius of another circle is twice the radius of $C$.

The centre of this circle is $(0,0)$. Write down its equation.

2003
3 (a) The circle $C$ has equation $x^{2}+y^{2}=25$.
(i) Verify that the point $(-4,3)$ is on the circle $C$.
(ii) Write down the coordinates of a point that lies outside $C$ and give a reason for your answer.

## 2002

3 (a) Write down the coordinates of any three points that lie on the circle with equation $x^{2}+y^{2}=100$.

## 2001

3 (c) $C$ is a circle with centre $(0,0)$. It passes through the point $(1,-5)$.
(i) Write down the equation of $C$.
(ii) The point $(p, p)$ lies inside $C$ where $p \in \mathbf{Z}$. Find all the possible values of $p$.

## 2000

3 (a) The circle $C$ has equation $x^{2}+y^{2}=16$.
(i) Write down the length of the radius of $C$.
(ii) Show, by calculation, that the point $(3,1)$ is inside the circle.

## 1999

3 (a) $C$ is a circle with centre $(0,0)$ passing through the point $(8,6)$.
Find
(i) the radius length of $C$
(ii) the equation of $C$.

## 1998

3 (a) A circle $C$, with centre $(0,0)$, passes through the point $(4,-3)$.
(i) Find the length of the radius of $C$.
(ii) Show, by calculation, that the point $(6,-1)$ lies outside $C$.

## 1996

3 (a) The equation of a circle is $x^{2}+y^{2}=36$.
(i) Write down its radius length.
(ii) Verify, by calculation, that the point $(2,3)$ is inside the circle.

## Answers

20073 (a) (i) $x^{2}+y^{2}=16$
20053 (a) (i) ( 0,0 ), $r=7$
(a) (i) $r=6$
(ii) $x^{2}+y^{2}=144$

20013
20003 (a) (i) $r=4$
19993 (a) (i) $10 \quad$ (ii) $x^{2}+y^{2}=100$
19983 (a) (i) $r=5$
19963 (a) (i) $r=6$

