# 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  $p \in \mathbb{Z}$ . 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			
2007	3	(a) (i) $x^2 + y^2 = 16$	
2005	3	(a) (i) (0, 0), $r = 7$	
2004	3	(a) (i) $r = 6$	(ii) $x^2 + y^2 = 144$
2001	3	(c) (i) $x^2 + y^2 = 26$	(ii) {-3, -2, -1, 0, 1, 2, 3}
2000	3	(a) (i) $r = 4$	
1999	3	(a) (i) 10	(ii) $x^2 + y^2 = 100$
1998	3	(a) (i) $r = 5$	
1996	3	(a) (i) $r = 6$	