Essential Skills 9

The skills in this series of worksheets appear frequently.

These are the GIFTS you must take to succeed

Intersection of Straight Line and a Circle

Find the coordinates of the points of intersection on each:

1. $x^2 + y^2 - 6x + 2y - 35 = 0$ and $y = 2x + 8$
2. $x^2 + y^2 - 6x - 4y + 8 = 0$ and $y = 2x + 1$
3. $x^2 + y^2 - 6x - 8y - 55 = 0$ and $x = 31 - 2y$
4. $x^2 + y^2 - 4x - 10y - 24 = 0$ and $y = 12 - x$
5. $x^2 + y^2 = 8$ and $y = 4 - x$
6. $x^2 + y^2 - 6x - 2y - 24 = 0$ and $y = x$
7. $x^2 + y^2 + 4x + 2y - 20 = 0$ and $y = 2x + 8$
8. $x^2 + y^2 + 18x + 20y + 81 = 0$ and $y = x + 1$
9. $x^2 + y^2 - 6x - 8y - 4 = 0$ and $y = 14 - x$
10. $x^2 + y^2 - 2x - 4y + 1 = 0$ and $x + y = 1$

APPLYING QUESTION

(a) Find the equation of a circle which has D (4, 1) and F (-2, -7) as its diameter. Leave your answer in the form $x^2 + y^2 + 2gx + 2fy + c = 0$.

(b) Establish the coordinates of the points of intersection between the circle and the line $y = x + 1$