

Name: _____

Date: _____

1. Solve the simultaneous equations

$$x^2 + y^2 = 10$$

$$y = x + 2$$

$$(x, y) = (-2, 0), (0, 2) \dots\dots\dots (4)$$

2. Solve the simultaneous equations

$$x^2 + y^2 = 65$$

$$x = y - 7$$

$$(x, y) = (1, 8), (-8, -1) \dots\dots\dots (4)$$

3. Solve the simultaneous equations

$$x^2 + 3y^2 = 28$$

$$y = x + 2$$

$$(x, y) = (-1, 1), (5, 7) \dots\dots\dots (4)$$

4. Solve the simultaneous equations

$$x^2 + y^2 = 1$$

$$x - y = 1$$

$$(x, y) = \left(\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right) \dots\dots\dots (4)$$



5. Solve the simultaneous equations

$$x^2 + y^2 = 6$$

$$y = 3x - 4$$

Give your answers to 3 significant figures.

$$(x, y) \approx (2.23, 2.69), (-3.03, -13.1) \dots\dots (5)$$

6. Solve the simultaneous equations

$$x^2 + 2y^2 = 20$$

$$x = y + 3$$

Give your answers to 3 significant figures.

$$(x, y) \approx (0.950, -2.05), (-4.95, -7.95) \dots\dots (5)$$

7. Solve the simultaneous equations

$$x^2 - y^2 = 5.25$$

$$2x + 3y = 4$$

$$(x, y) \approx (2.05, -0.0334), (-0.688, 1.12) \dots\dots (5)$$

8. The curve C has equation

$$y = x^2 - 2x - 8$$

The line L has equation

$$y + 3x - 4 = 0$$

- (a) Show, algebraically, that C and L have exactly one point in common.

$$(2, -2) \dots\dots\dots (4)$$

- (b) Hence, describe the relationship between the line L and the curve C .

The line L is a tangent to the curve C .

They touch at exactly one point, $(2, -2)$.

(1)

