

Name:

*Please show all your work to get the full credit. It consists of 4 questions.  
It is due on Monday, 9th Oct. Please turn over.*

**1(3pts)** (a) Which of the points  $C(-5, 3)$  or  $D(4, 0)$  is closer to the point  $E(-2, 1)$ ?

(b) If  $M(6, 8)$  is the midpoint of the line segment  $AB$ , and if  $A$  has coordinates  $(2, 3)$ , find the coordinates of  $B$ .

**2(3pts)** Show that the equation represents a circle, and find the center and radius of the circle.

$$x^2 + y^2 + 2x + y + 1 = 0$$

**3(2pts)** Find the slope and y-intercept of the line.

$$-3x - 4y + 33 = 0$$

**4(2pts)** Find an equation of the line that satisfies the given conditions.

Through  $\left(\frac{1}{2}, -\frac{2}{3}\right)$ ; perpendicular to the line  $4x - 8y = 4$ .