Name _____ raw scaled percent

Math 10 Trimester 3 Exam 2A (152 Points)

Circles

■ **Partial credit may be given for correct work. Therefore, it is to your advantage to write clear solutions. If I cannot understand a solution within 60 seconds, then it will receive no partial credit.**

■ **A. Answer the following. (2 points each). This section is 4% of exam.**

[1] **Write the equation in center-radius form of a circle centered at the origin having radius *6*.**

[2] **Write the equation in center-radius form of a circle centered at $C(-5, 8)$ radius *6*.**

[3] **Write the equation of the line tangent to a circle of radius r at point (x_0, y_0) on the circle.**

■ **B. Answer the following. (28 points each). This section is 92% of exam.**

[1] **Find the equation of the line tangent to the circle $x^2 + y^2 = 25$ at the point (3, 4).**

[2] **Find the equations of the lines through (1, 7) that are tangent to the circle $x^2 + y^2 = 25$.**

[3] **Find the equations of the lines of slope $\frac{1}{2}$ that are tangent to the circle $x^2 + y^2 = 16$.**

[4] **At how many points does the circle $x^2 - 16\,x + y^2 + 18\,y + 96 = 0$**

[a] **intersect the x-axis?** ***Answer:*** _____

[b] **intersect the y-axis?** ***Answer:*** _____

[5] **Find the center and the radius of the circle with equation $x^2 - 4\,x + y^2 + 6\,y - 3 = 0$**

■ **C. Answer the following. (6 points). This section is 4% of exam.**

[1] Let the lines through the point (3, 0) be tangent to the circle $x^2 + y^2 = 1$ at points R and S. Find the distance RS.

Answers

Math 10 Trimester 3 Exam 2A (152 Points)

Circles

■ **A.**

[1] $x^2 + y^2 = 36$

[2] $(x + 5)^2 + (y - 8)^2 = 36$

[3] $x_0\, x + y_0\, y = r^2$

■ **B.**

[1] $3\, x + 4\, y = 25$

[2] $\ell_1 : 4x + 3y = 25$ and $\ell_2 : -3x + 4y = 25$

[3] $\ell_1 : \frac{4\sqrt{5}}{5} x - \frac{8\sqrt{5}}{5} y = 16$ and $\ell_2 : -\frac{4\sqrt{5}}{5} x + \frac{8\sqrt{5}}{5} y = 16$

[4] (a) None. (b) None.

[5] $(2, -3)$, $r = 4$

■ **C.**

[1] RS = $\frac{4\sqrt{2}}{3}$