## MPM 2D <u>Analytical Geometry MORE Review – Worksheet #5</u>

Date:

Name:

- 1. Find the exact distance between each pair of points:
  - a) (4,-1) and (1,3)
  - b) (2,0) and (4,-5)
- 2. Write an equation for the circle with centre (0,0) and given radius:
  - a) radius = 3
  - b) radius = 7
- 3. Determine the exact radius of each circle:
  - a)  $x^2 + y^2 = 100$
  - b)  $x^2 + y^2 = 15$
- 4. Determine the coordinates of the midpoint of the line segment with endpoints (-2,-5) and (-8,3)
- 5. For the line segment DE, one endpoint is D(3,1) and the midpoint is M(0,-4). Find the coordinates of endpoint E
- 6. The vertices of a triangle are R(3,0), S(-1,3), and T(0,-2).
  - a) Classify the triangle by side length.
  - b) Find the perimeter of the triangle to the nearest tenth.
- 7. Quadrilateral RSTU has vertices R(3,2), S(0,4), T(-2,1) and U(1,-1). Verify that:
  - a) quadrilateral RSTU is a square.
  - b) the diagonals of quadrilateral RSTU perpendicularly bisect each other and are equal in length.
- 8. Determine the equation of the right bisector of the line segment joining E(2,6) and F(4, -2). Put the equation in standard form.
- 9. A line segment has endpoints K (-6, 5) and L (2, 1).
  - a) Plot the points and graph the line segment.
  - b) Find the length of the segment.
  - c) Find the slope of the segment.
  - d) State the co-ordinates of the midpoint.
- 10. Determine the equation of the line passing through K (-6, 5) and L (2, 1) in standard form.
- 11. State the equation of a circle with centre (0, 0) and radius 7.
- 12. Determine the equation of the perpendicular bisector of the line through the points Q (5, 8) and R (-1, 2), in standard form.
- 13. A triangle has vertices A (-1, 3), B (1, 7), and C (5, 5).
  - a) Sketch and properly label the triangle on the grid provided.
  - b) Verify that  $\triangle ABC$  is a right triangle.
  - c) Determine whether the triangle is scalene, isosceles, or equilateral.
  - d) Using the grid on the right, find a point D so that ABCD is a square.

2. a)  $x^2 + y^2 = 9$  b)  $x^2 + y^2 = 49$ 

e) Verify that ABCD is a square.

Answers:

1. a) 5 b) v/29

6. a) scalene, b)13.7	7. a) opposite sides are parallel and adjacent sides are perpendicular, all sides are the same length
	7. b) slopes are perpendicular and have same length

8) x - 4y + 5 = 0 9. b) 8.94, c) -1/2, d) (-2,3)

10. x + 2y - 4 = 0

3. a)10 b) √15 4. (-5,-1)

11.  $x^2 + y^2 = 49$  12. x + y - 7 = 0

5. (-3,-9)

13. b) show that AB is perpendicular to BC, c) isosceles, d) (3,1), e) opposite sides are parallel and adjacent sides are perpendicular, all sides are the same length

