

# EXAM 3 - MTH 127-501 SUMMER II 2010

Math 127-501  
25 June, 2010

Name: \_\_\_\_\_

**Read all of the following information before starting the exam:**

- Show all work, clearly and in order, if you want to get full credit. I reserve the right to take off points if I cannot see how you arrived at your answer (even if your final answer is correct).
- Justify your answers algebraically whenever possible to ensure full credit. When you do use your calculator, sketch all relevant graphs and explain all relevant mathematics.
- Circle or otherwise indicate your final answers.
- Please keep your written answers brief; be clear and to the point.
- Good luck!

1. (18 points) For the points  $A = (1, -2)$  and  $B = (5, 6)$ ...
  - a. (6 pts) Compute the distance between  $A$  and  $B$ .
  
  - b. (6 pts) Find the midpoint between  $A$  and  $B$ .
  
  - c. (6 pts) Compute the slope of the line between  $A$  and  $B$ .
  
2. (6 points) Graph  $y = x^2 + x + 1$  by plotting points.
  
  
  
  
  
  
  
  
  
  
3. (6 points) List the  $x$ -intercepts and  $y$ -intercepts of
  
  
  
  
  
  
  
  
  
  
4. (18 points) Given the following equations test for  $x$ -axis symmetry,  $y$ -axis symmetry, and origin symmetry.
  - a. (6 pts)  $y^2 = 7x$
  - b. (6 pts)  $x^2 + 5y^2 = 16 + y$
  - c. (6 pts)  $y = \frac{1}{x}$

5. (6 points) Write an equation for the circle with center  $(4, 5)$  and radius 3.

6. (18 points) Find an equation for lines matching the descriptions below.

a. (6 pts) slope =  $-3$ , contains the point  $(1, -7)$

b. (6 pts) parallel to the line  $x + 2y = 2$ , contains the point  $(3, -3)$

c. (6 pts) containing the two points  $(2, 1)$  and  $(-6, -6)$

**7.** (12 points) Find the intercepts of the given equation and graph it.

**a.** (6 pts)  $x + 3y = 2$

**b.** (6 pts)  $4x - \frac{1}{3}y = 9$

**8.** (6 points) Find an equation of the given circle.

**9.** (6 points) Find an equation of the given line.