Practice Test 1

Answers available online at

`http://www.divms.uiowa.edu/~stoeckel/BusinessMathResources.html`

Tuesday, February 19, 2008

Mathematics for Business 22M:013:SCA TTh 6:00 - 8:00 PM

Instructor: Matt Stoeckel **Name:**

You have 60 minutes to complete your work. Show all work!

1. Simplify each expression.

   (a)
   $$\frac{5^{-1/2} \cdot 5x^{5/2}}{(5x)^{3/2}}$$

   (b)
   $$\sqrt{\frac{32a^4}{b^2}}$$

2. For each, find all solutions of the equation. Check your solutions in the original equation.

   (a) $\sqrt{x-10}-3=0$

   (b) $(5x+1)^2-16=0$

3. Solve the equation by extracting square roots.

$$(3x-1)^2=64$$

4. Use the Quadratic Formula to solve the equation.

$$2x^2+3x+1=0$$

5. In each of the following, solve the given inequality. Write your solution in interval notation and sketch the solution on the real number line.

   (a) $6x - 4 \leq 2 + 8x$

   (b) $0 < 2x + 3 < 9$

   (c) $|x - 5| \leq 5$

6. Show that the points $(2, 1)$, $(4, 0)$ and $(5, 7)$ are the vertices of a right triangle.

7. In the following, write the standard form of the equation of the circle with the given characteristics.

   (a) Center: $(-7, -4)$; radius: 7

   (b) Center: $(-1, 2)$; solution point: (0,0)

8. Complete the table. Use the resulting solution points to sketch the graph of the equation,

$$y = 5 - x^2$$

x	-2	-1	0	1	2
y					
(x, y)					

9. Give an equation of the line that passes through the points $(-1, 3)$ and $(4, 4)$.

10. Write the slope-intercept form of the equation of the line passing through the given point and perpendicular to the given line.

    Point $= (2, 1)$, *Line:* $4x - 2y = 3$