Math 1010 Spring 2017   Sample Test 1

1) Solve: $2 - 4x = 12$

2) Solve by factoring: $x^2 - x = 20$

3) Solve by completing the square: $x^2 + 16x + 5 = 0$

4) Solve using the quadratic formula: $2x^2 - 3x - 7 = 0$

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

Solve

6) $|7x - 8| = 4$

7) $-3 \le 5x + 3 \le 7$

8) $|x - 4| \le 5$

9) $x^2 - 25 < 0$

10) 2x + 7 > 8x - 1

11) Simplify to a + bi form. $(3 - 6i)(5 + i)$

12) Simplify to a + bi form. $\frac{2-5i}{7+2i}$

The length of a rectangular field is 50 feet longer than its width, and the area of the field is 21,875 square feet.

13) Draw a representative sketch of this field and label the dimensions using one variable.

14)Express the area (21,875 square feet) as a product of the length and the width using numbers and one variable.

15) Solve the equation, then state the field's dimensions using a grammatically correct English sentence.

16) What is the domain of $f(x) = \frac{x^2+1}{\sqrt{2x-5}}$?

17) Find the equation of the line through the points (2, 3) and (-6, 9).

18) Find the equation of the vertical line through the point (2, -8).

19) Find the slope and y-axis intercept of the line 3y + 2x - 11 = 0.

20) Find the equation of the line through (2, -3) parallel to the x-axis.

21) Find the equation of the line through (1, 2) perpendicular to the line 3y + x + 7 = 0.

$f(x) = 3x + 2$, $g(x) = x^2$

22) Find f(g(4)).

23) Find $f^{-1}(x)$