MATH 1010-2: PRACTICE EXAM #1

1. (24 points – 3 points each) Determine if each of the following assertions is valid. Indicate you answer by clearly circling either TRUE or FALSE.

(a) The collection of pairs $\{(0,1),(1,2),(2,3),(3,4)\}$ represents a function.

TRUE FALSE

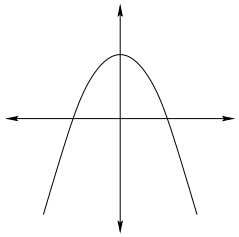
(b) The slope of the line given by $3y + 6x - 10 = 0$ is $-\frac{1}{2}$.

TRUE FALSE

(c) There are real numbers which are not fractions.

TRUE FALSE

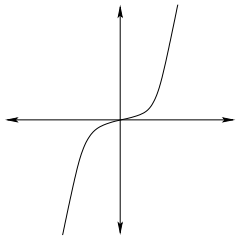
(d) The following



is the graph of $f(x) = -x^2 + 2$.

TRUE FALSE

(e) The following



is the graph of $f(x) = x^3$.

TRUE FALSE

(f) $(-1)^{10} = 1$.

TRUE FALSE

(g) If m is the slope of a line ℓ, then $-m$ is the slope of any line perpendicular to ℓ.

TRUE FALSE

(h) No point on the line $y = x + 2$ lies in the third quadrant.

TRUE FALSE

2. Simplify the following expression:

$$3\left[(x-1)^2 + 2x(2x+1) - x^3\right]$$

3. Solve the following equation for x:

$$|2x+5| = 4.$$

4. Find the equation of the line through $(1, 1)$ which is parallel to

$$y = -2x + 5.$$

Write your answer in slope-intercept form.

5. Solve the following inequality for x. Then graph your solution on the number line.

$$\frac{x-3}{3} + 3 \leq \frac{x}{8}.$$

6. Ticket sales for a play total $2200. There are three times as many adult tickets sold as children's tickets. The price of an adult ticket is $6 and the price of a child's ticket is $4. Find the number of children's tickets which were sold.