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Quiz 2 Solutions
MAC 1147.3077, Fall 2015
Thursday, September 10, 2015

Show all relevant work to support your answer. A correct answer without supporting work will not earn the points. **Problems 3 and 4 are on the back.**

1. (1 point) What is your favorite food? (Hint: There is no wrong answer)

1. _____

2. (4 points) Solve the following inequalities using interval notation:

(a) $|4 - 6x| \geq 4$

Solution: The inequality translates to $(4 - 6x) \geq 4 \cup -(4 - 6x) \geq 4$. Solving $(4 - 6x) \geq 4$ for x, we get $x \leq 0$. As for the second inequality, we get $x \geq \frac{4}{3}$. Hence, the solution is $(-\infty, 0] \cup [\frac{4}{3}, \infty)$.

(b) $2x - 1 > x - 2(3 + 2x)$

Solution: After simplifying the right side, we get $2x - 1 > -3x - 6$. Hence, we see $5x > -5$, or $x > -1$.

3. (2 points) Solve the following equation for p: $\dfrac{p-4}{6} - \dfrac{2p}{3} = \dfrac{1-3p}{2}$.

A. $\frac{5}{6}$

B. $\frac{4}{3}$

C. $\frac{-5}{2}$

D. $\frac{7}{6}$

E. $\frac{-1}{3}$

Solution: The "classic" example of an odd function is $y = x^3$. Hence, envisioning the shape of x^3 with the point $(3, 7)$, we must have the point $(-3, -7)$ also on the graph.

4. (3 points) Solve the following equation for x: $x^2 - 8x = -15$.

Solution: Add 15 to both sides to get $x^2 - 8x + 15 = 0$. Then the polynomial factors as $(x-3)(x-5)$ and so the solutions are $x = 3, 5$.