Math 135 - section 01 - Precalculus Diagnostic Quiz
September 6, 2019

Your Name:_____

Show your work. Circle the correct answer in the multiple choice questions. Please turn over for problems 4,5,6.

1. Find all real numbers x satisfying $|2x - 6| = 8$.

2. Solve for t: $3t^2 - 4t + 1 = 0$ (find all real number solutions).

3. Which simplified form is equal to

$$\left(u^{-6}v^2\right)^3 \cdot \left(\frac{v^{-2}}{u^2}\right)^{-1}?$$

A. $u^{-16}v^8$ B. $u^{-14}v^4$ C. $u^{-9}v^3$ D. $(uv)^{-7}$

4. Find common factors and cancel to simplify: $\dfrac{12x}{5x-10} \cdot \dfrac{x^2-4}{2x+4}$

A. $\dfrac{x^2+12x-4}{5x-2}$ B. $\dfrac{6x}{5}$ C. $-\dfrac{4}{3}(x-1)$ D. $\dfrac{6x^2+12}{5x+10}$ E. None of the above.

5. If $f(x) = 5x^2 - 11$, find $f(a+1) - f(a)$ and simplify.

6. Let $f(x) = x^2 - 3x$ and $g(x) = x + 1$. Which function is equal to $f(g(x))$?

A. $x^2 - x$ B. $x^2 - 3x + 1$ C. $x^2 + x$ D. $x^2 - x - 2$