

Math 172-Quiz # 4

November 15, 2013

Instructors: Pat Wrean & Leah Howard

Name: _____

Total: 40 Points

1. [3 points] Calculate the following and write your answer in scientific notation.

$$\frac{0.00000036}{400,000 \times 0.03}$$

2. [4 points] Evaluate the following.

a) $\frac{-2^{-3}}{(-4)^{-2}}$

b) $(\frac{1}{2})^{-3}(\frac{4}{3})^{-2}$

3. [3 points] Simplify the following expression. Use only positive exponents in your answer.

$$\frac{a^{-1}b^{-7}}{a^2(-5a^3b^3)^{-2}}$$

4. [11 points] Factor the following polynomials **completely**:

a) $3x^3+12x^2+12x$

b) $6x^3z-42x^2z+30xz$

c) $7x^3-56y^3$

d) $4y^{2r}+5y^r-6$

5. [10 points] Find the solution set for the following equations.

a) $m^3 + 7m^2 - 4m - 28 = 0$

b) $(y-5)(y-6) = 2$

c) $6a^3 = -7a^2 + 3a$

6. [3 points] Find the product of the two polynomials.

$$(3x^{n+2} - x^n)(5x^{2n+3} - x^{2n+1})$$

7. [6 points] The length of a rectangular yard is four feet longer than its width. The diagonal distance across the yard is eight feet longer than the yard's width. Find the dimensions of the yard.