

Name:

Quiz 2

Math 100 Fall 2011

Write your answers to the following questions in the space below. You may also use the reverse side of this sheet, if you need more room.

1. (5 pts.) Simplify the expression below. Your answer should have no negative exponents.

$$\left(\frac{9m^{-2}n}{3mn}\right)^{-3}$$

SOLUTION:

$$\left(\frac{9m^{-2}n}{3mn}\right)^{-3} = \left(\frac{3}{m^3}\right)^{-3} = \frac{m^9}{27}$$

2. (5 pts.) Let  $x = 1250000000$  and  $y = .0000004$ . Write  $x$  and  $y$  in scientific notation, then compute their product,  $xy$ , expressing this also in scientific notation.

SOLUTION:  $x = 1.25 \times 10^9$ ,  $y = 4 \times 10^{-7}$ ,  $xy = 5 \times 10^2$ .

3. (5 pts.) For the following expression, list all TERMS along with their DEGREES:

$$x^2y^3 + 2x^{-1}y^2 + 5x^{-1}y^{-2}.$$

SOLUTION:

$x^2y^3$ , degree 5

$2x^{-1}y^2$ , degree 1

$5x^{-1}y^{-2}$ , degree -3.

4. (5 pts.) Find the solution set to the following linear equation:

$$\frac{1}{4}(x - 3) + \frac{1}{6} = \frac{1}{3}(3x - 1) + \frac{1}{2}.$$

SOLUTION: The equation has exactly one solution, namely  $x = -1$ . Thus the solution set is  $\{-1\}$ .