Math095 Basic Algebra – Fall 2009 – Arrowsmith – Test 3

Name_____

Each of the 18 questions is worth 5 points plus 1 point for each of 10 homework problems for a total of 100 points

Simplify the expression. Use positive exponents. Assume variables represent nonzero real numbers.

1) $\dfrac{7^4 x^9}{7^7 x^6}$

Use a combination of rules for exponents to simplify. Write answers with only positive exponents. Assume that all variables represent nonzero real numbers.

2) $\dfrac{\left(x^4 y^{-3}\right)^3}{x^{-2} y^4}$

Perform the division. Write the answer with positive exponents.

3) $\dfrac{-8x^6 + 16x^4}{-4x^2}$

4) $\dfrac{35x^{11} + 10x^{10} + 10x^{9} + 25x^{7} + 8x^{5}}{5x^{9}}$

Write the rational expression in lowest terms.

5) $\dfrac{a^2 - 2a}{(a + 7)(a - 2)}$

6) $\dfrac{a^2 - 25}{a^2 + 8a + 15}$

Write the expression in lowest terms.

7) $\dfrac{m^2 - 16m}{16 - m}$

Multiply. Write the answer in lowest terms.

8) $\dfrac{k^2 + 6k + 9}{k^2 + 7k + 12} \cdot \dfrac{k^2 + 4k}{k^2 + 5k + 6}$

Divide. Write the answer in lowest terms.

9) $\dfrac{4x - 4y}{9 - 3z} \div \dfrac{2y - 2x}{z - 3}$

Find the least common denominator (LCD).

10) $\frac{1}{30x^5}, \frac{1}{6x^4}, \frac{3}{45x^2}$

11) $\frac{1}{r^2 + 16r + 64}, \frac{1}{r^2 + 8r}$

Perform the indicated operation and simplify.

12) $\frac{3}{r} + \frac{7}{r - 5}$

Perform the indicated operation and simplify.

13) $\frac{x}{x-3} + \frac{6}{x+3} - \frac{18}{x^2-9}$

Add or subtract. Write the answer in lowest terms.

14) $\frac{1}{x-5} + \frac{2}{5-x}$

Solve the equation.

15) $\frac{x-9}{6} = \frac{x+6}{9}$

16) $\frac{2}{t} = \frac{t}{-2t + 6}$

17) $\frac{4}{5} = \frac{7}{x + 8}$

Solve the problem.

18) If 4 hours are required to type 16 pages, how many hours would be required to type 28 pages?