

Math095 Basic Algebra – Spring 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.

$$1) \frac{94x^9}{96x^2}$$

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

$$2) \frac{(x^4y-2)^2}{x^{-2}y^5}$$

Perform the division. Write the answer with positive exponents.

$$3) \frac{4x^6 - 10x^4}{2x^2}$$

$$4) \frac{9x^{11} - 15x^{10} + 24x^9 + 24x^7 + 7x^5}{3x^9}$$

Write the rational expression in lowest terms.

$$5) \frac{a^2 - 9a}{(a + 5)(a - 9)}$$

$$6) \frac{a^2 - 49}{a^2 + 11a + 28}$$

Write the expression in lowest terms.

$$7) \frac{m^2 - 4m}{4 - m}$$

Multiply. Write the answer in lowest terms.

$$8) \frac{k^2 + 14k + 49}{k^2 + 16k + 63} \cdot \frac{k^2 + 9k}{k^2 + 14k + 49}$$

Divide. Write the answer in lowest terms.

$$9) \frac{4x - 4y}{25 - 5z} \div \frac{2y - 2x}{z - 5}$$

Find the least common denominator (LCD).

$$10) \frac{1}{20x^5}, \frac{1}{12x^4}, \frac{7}{15x^2}$$

$$11) \frac{1}{r^2 + 18r + 81}, \frac{1}{r^2 + 9r}$$

Perform the indicated operation and simplify.

$$12) \frac{2}{r} + \frac{6}{r-5}$$

Perform the indicated operation and simplify.

$$13) \frac{x}{x-6} + \frac{12}{x+6} - \frac{72}{x^2-36}$$

Add or subtract. Write the answer in lowest terms.

$$14) \frac{3}{x-9} + \frac{5}{9-x}$$

Solve the equation.

$$15) \frac{x-2}{9} = \frac{x+8}{2}$$

$$16) \frac{2}{t} = \frac{t}{-3t - 4}$$

$$17) \frac{3}{4} = \frac{12}{x + 5}$$

Solve the problem.

- 18) If 4 hours are required to type 20 pages, how many hours would be required to type 35 pages?