

Math095 Basic Algebra – Arrowsmith – PreTest 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.

$$1) \frac{6^2 x^8}{6^9 x^3}$$

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

$$2) \frac{(x^3 y^{-5})^4}{x^{-4} y^3}$$

Perform the division. Write the answer with positive exponents.

$$3) \frac{-9x^7 - 18x^5}{-3x^3}$$

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$$4) \frac{16x^{10} - 14x^9 + 8x^8 + 10x^6 + 3x^4}{2x^8}$$

Write the rational expression in lowest terms.

$$5) \frac{a^2 - 6a}{(a + 9)(a - 6)}$$

$$6) \frac{a^2 - 36}{a^2 + 9a + 18}$$

Write the expression in lowest terms.

$$7) \frac{m^2 - 9m}{9 - m}$$

Multiply. Write the answer in lowest terms.

$$8) \frac{k^2 + 11k + 28}{k^2 + 15k + 56} \cdot \frac{k^2 + 8k}{k^2 + 9k + 20}$$

Divide. Write the answer in lowest terms.

$$9) \frac{4x - 4y}{36 - 9z} \div \frac{2y - 2x}{z - 4}$$

Find the least common denominator (LCD).

$$10) \frac{1}{40x^5}, \frac{1}{36x^4}, \frac{4}{90x^2}$$

$$11) \frac{1}{r^2 + 10r + 25}, \frac{1}{r^2 + 5r}$$

Perform the indicated operation and simplify.

$$12) \frac{4}{r} + \frac{5}{r-3}$$

Perform the indicated operation and simplify.

$$13) \frac{x}{x-4} + \frac{8}{x+4} - \frac{32}{x^2-16}$$

Add or subtract. Write the answer in lowest terms.

$$14) \frac{4}{x-8} + \frac{8}{8-x}$$

Solve the equation.

$$15) \frac{x-8}{3} = \frac{x+9}{8}$$

$$16) \frac{2}{t} = \frac{t}{5t - 12}$$

$$17) \frac{5}{6} = \frac{8}{x + 6}$$

Solve the problem.

- 18) If 4 hours are required to type 12 pages, how many hours would be required to type 21 pages?