

Preparation for College Algebra Package

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**** Do not write on Handout - Use separate sheets of paper and show your work ****

Add or subtract as indicated. Write the answer in lowest terms.

1) $\frac{4}{7} + \frac{5}{8}$

Use the distributive property to write the sum as a product.

2) $(-1) \cdot 6 + (-1) \cdot a$

Use the commutative and associative properties to simplify the expression.

3) $\frac{2}{9} \left(\frac{9}{2} t \right)$

Solve the equation.

4) $3x + 6(2x - 3) = 4 - 7x$

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

Simplify the expression.

6) $\frac{6x^6}{x^2}$

7) $\frac{(x^2)^4}{(3x)^3}$

Add or Subtract as indicated. DO NOT MULTIPLY!

8) $(7x - 7) + (11x - 3)$

9) $(3x^2 - 8x + 5) - (x^2 - 4x + 2) + (8x^2 + 5)$

Multiply.

10) $3x(-6x^2 + 5x - 8)$

11) $(z - 2)(z - 10)$

12) $(5x + 5)(2x + 10)$

Simplify the expression. Write the result using positive exponents only.

13) 3^{-2}

14) $\frac{x^4(x-8)^{-9}}{(x-2)^{-3}}$

Find the quotient using long division.

15) $\frac{x^2 + 11x + 15}{x + 3}$

Factor the trinomial completely.

16) $x^2 + x - 42$

Factor the binomial completely.

17) $81 - 49x^2$

Factor the sum or difference of two cubes.

18) $t^3 + 64$

Solve the equation.

19) $3x^2 + 15x + 18 = 0$

Multiply or divide as indicated.

20) $\frac{4x + 8}{15} \div \frac{5x + 10}{10}$

Perform the indicated operation. Simplify if possible.

21) $\frac{4}{m + 4} + \frac{m}{m + 4}$

Find the domain of the rational expression.

22) $f(x) = \frac{1 - 4x}{x^2 - 2x - 15}$

Perform the indicated operation. Simplify if possible.

23) $\frac{42}{6x} + \frac{42}{7x}$

$$24) \frac{6}{x+8} + \frac{9}{8x+64}$$

Solve the equation.

$$25) \frac{x}{4} - \frac{1}{2} = \frac{x+6}{2}$$

Simplify.

26)

$$\frac{1 + \frac{3}{7}}{2 + \frac{4}{7}}$$