Student: _____	**Instructor:** Deb Wertz	**Assignment:** Homework #12
Date: _____	**Course:** MAP102 MASTER	

1. Multiply.

$$\frac{15x+15}{8x+24} \cdot \frac{4x+12}{5x^2-5}$$

$$\frac{15x+15}{8x+24} \cdot \frac{4x+12}{5x^2-5} = \underline{\qquad\qquad}$$ (Simplify your answer.)

2. Multiply and simplify.

$$\frac{18a-12a^2}{4a^2+12a+9} \cdot \frac{4a^2+12a+9}{4a^2-9}$$

$$\frac{18a-12a^2}{4a^2+12a+9} \cdot \frac{4a^2+12a+9}{4a^2-9} = \underline{\qquad\qquad}$$

3. Divide and simplify.

$$\frac{4x}{9} \div \frac{16x+32}{9x+18}$$

$$\frac{4x}{9} \div \frac{16x+32}{9x+18} = \underline{\qquad\qquad}$$

4. Divide and simplify.

$$\frac{a+b}{ab} \div \frac{a^2-b^2}{4a^3b}$$

$$\frac{a+b}{ab} \div \frac{a^2-b^2}{4a^3b} = \underline{\qquad\qquad}$$

5. Perform each indicated operation.

$$\frac{5}{x} \div \frac{4xy}{x^2} \cdot \frac{16x^3}{x^5}$$

$$\frac{5}{x} \div \frac{4xy}{x^2} \cdot \frac{16x^3}{x^5} = \underline{\qquad\qquad}$$ (Simplify your answer.)

6. Find the function value.

If $f(x) = \frac{x+8}{2x-1}$, find f(6), f(0), and f(−5).

f(6) = _____ (Type an integer or a simplified fraction.)

f(0) = _____ (Type an integer or a simplified fraction.)

f(−5) = _____ (Type an integer or a simplified fraction.)

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7. Find each function value. If $g(x) = \frac{x^2+8}{x^3-25x}$, find g(3), g(−2), and g(2).

g(3) = _____
(Type an integer or a simplified fraction.)

g(−2) = _____
(Type an integer or a simplified fraction.)

g(2) = _____
(Type an integer or a simplified fraction.)

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8. Which of the expressions are equivalent to $\frac{x}{7-x}$?

Select all equivalent expressions.

- ☐ **A.** $\frac{-x}{-7+x}$
- ☐ **B.** $\frac{-x}{x-7}$
- ☐ **C.** $\frac{x}{x-7}$
- ☐ **D.** $\frac{-x}{7-x}$

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9. Fill in the blank.

The denominators must be the same before performing the operations _____.

The denominators must be the same before performing the operations (1) _____

(1)
- ○ multiplication and division.
- ○ addition and subtraction.

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10. Name the operation(s) that make the statement true.

To perform this operation, multiply the first rational expression by the reciprocal of the second rational expression.

Choose the correct answer below.

- Addition
- Addition, Subtraction
- Subtraction
- Division
- Multiplication
- Division, Subtraction
- Division, Multiplication
- Addition, Multiplication

11. Fill in the blank.

Numerator times numerator all over denominator times denominator is _____.

Numerator times numerator all over denominator times denominator is (1) _____

(1)
- addition.
- subtraction.
- division.
- multiplication.

12. Use the example in the hint to perform the following subtraction.

$$\frac{7}{2x} - \frac{x+1}{2x} = \_\_\_\_\_$$

Hint: $\frac{8}{x+1} - \frac{x+5}{x+1} = \frac{8-(x+5)}{x+1} = \frac{3-x}{x+1}$

$\frac{7}{2x} - \frac{x+1}{2x} =$ _____ (Simplify your answer.)

13. Subtract fractions. Simplify the answer.

$$\frac{x-6}{6x} - \frac{x+6}{6x}$$

$\frac{x-6}{6x} - \frac{x+6}{6x} =$ _____

14. Find the sum.

$$\frac{4}{9x} + \frac{7}{5x}$$

$\frac{4}{9x} + \frac{7}{5x} =$ _____

(Simplify your answer.)

15. Subtract fractions. Simplify the answer.

$$\frac{7}{2y^2} - \frac{2}{5y}$$

$\frac{7}{2y^2} - \frac{2}{5y} =$ _____

16. Perform the indicated operation.

$$\frac{x-2}{x+4} - \frac{x+7}{x-4}$$

$\frac{x-2}{x+4} - \frac{x+7}{x-4} =$ _____ (Simplify your answer.)

17. Add.

$$\frac{9}{4x+8} + \frac{16}{3x+6}$$

$\frac{9}{4x+8} + \frac{16}{3x+6} =$ _____ (Simplify your answer.)

1. $\frac{3}{2(x-1)}$

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2. $-\frac{6a}{2a+3}$

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3. $\frac{x}{4}$

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4. $\frac{4a^2}{a-b}$

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5. $\frac{20}{x^2y}$

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6. $\frac{14}{11}$

   -8

   $-\frac{3}{11}$

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7. $-\frac{17}{48}$

   $\frac{2}{7}$

   $-\frac{2}{7}$

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8. A. $\frac{-x}{-7+x}$, B. $\frac{-x}{x-7}$

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9. (1) addition and subtraction.

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10. Division

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11. (1) multiplication.

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12. $\frac{-x+6}{2x}$

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13. $-\frac{2}{x}$

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14. $\frac{83}{45x}$

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15. $\frac{35-4y}{10y^2}$

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16. $\frac{-17x-20}{(x-4)(x+4)}$

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17. $\frac{91}{12(x+2)}$
