

Student: \_\_\_\_\_  
Date: \_\_\_\_\_  
Time: \_\_\_\_\_

Instructor: Rick Butterworth  
Course: Inter Algebra Fall 2008  
Book: Carson: Elementary Algebra, 2e

Assignment: Inter Algebra -- Test Three

1. Find all numbers for which the rational expression is undefined.

$$\frac{6}{v-7}$$

The number for which the rational expression is undefined is .

(Type N if the rational expression is never undefined.)

2. Reduce the rational expression.

$$\frac{55m^3n^4p}{-25m^4n^5p}$$

The reduced expression is .

(Simplify your answer. Type exponential notation using positive exponents.)

3. Write the rational expression in lowest terms.

$$\frac{9y-45}{8y-40}$$

$$\frac{9y-45}{8y-40} = \text{}$$

(Type an integer or a fraction.)

4. Write the rational expression in lowest terms.

$$\frac{cm - cn + 3m - 3n}{cm - cn - 3m + 3n}$$

Choose the simplified expression.

A.  $\frac{c-3}{c+3}$

B.  $\frac{m+n}{m-n}$

C.  $\frac{m-n}{m+n}$

D.  $\frac{c+3}{c-3}$

5. Simplify by removing factors of 1.

$$\frac{v^2-25}{5-v}$$

The simplified form is .

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6. Multiply and simplify.

$$\frac{11x^7}{6q^2} \cdot \frac{36q^8}{121x}$$

The simplified product is .

7. Multiply.

$$\frac{7x - 21}{5x + 15} \cdot \frac{14x + 42}{10x - 30}$$

$$\frac{7x - 21}{5x + 15} \cdot \frac{14x + 42}{10x - 30} = \text{$$

(Type an integer or a fraction. Simplify your answer.)

8. Multiply the rational expressions.

$$\frac{10y}{y^2 - 6y + 9} \cdot \frac{y^2 - 9}{20y^2}$$

$$\frac{10y}{y^2 - 6y + 9} \cdot \frac{y^2 - 9}{20y^2} = \text{$$

(Simplify your answer. Use factored form.)

9. Find the product.

$$\frac{y^2 - 9}{3y - 15} \cdot \frac{y^2 - 25}{y^2 + 2y - 15}$$

The answer is .

(Simplify your answer. Use integers or fractions for any numbers in the expression.)

10. Divide and simplify.

$$\frac{50x^8}{2y^9} \div \frac{625x^4}{10y^6}$$

The simplified quotient is .

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11. Divide and simplify.

$$\frac{w^2 + 9w}{w^2 + 4w - 45} \div \frac{w}{w + 5}$$

$$\frac{w^2 + 9w}{w^2 + 4w - 45} \div \frac{w}{w + 5} = \square$$

(Type a fraction.)

12. Divide the rational expressions.

$$\frac{x^2 + 8x + 16}{x + 3} \div (5x^2 + 17x - 12)$$

$$\frac{x^2 + 8x + 16}{x + 3} \div (5x^2 + 17x - 12) = \square$$

(Simplify your answer. Use factored form.)

13. Subtract. Simplify by removing a factor of 1 when possible.

$$\frac{3z + 5}{z - 8} - \frac{z - 8}{z - 8}$$

$$\frac{3z + 5}{z - 8} - \frac{z - 8}{z - 8} = \square \text{ (Simplify your answer.)}$$

14. Subtract. Simplify, if possible.

$$\frac{b - 2}{22} - \frac{b + 3}{2}$$

Which choice is correct?

A.  $\frac{-5}{20}$

B.  $\frac{22}{-10b - 35}$

C.  $\frac{-10b - 35}{22}$

D.  $\frac{-10b - 35}{2}$

15. Subtract as indicated. Express your answer in lowest terms.

$$\frac{6}{5p^2} - \frac{2}{p}$$

$$\frac{6}{5p^2} - \frac{2}{p} = \square$$

(Simplify your answer.)

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16. Subtract.

$$\frac{6z}{z^2 - 16z + 55} - \frac{5z}{z^2 - 17z + 66}$$

The difference is .

(Simplify your answer.)

17. Add and express the answer in lowest terms.

$$\frac{18}{w-2} + \frac{12}{2-w}$$

The simplified sum is .

(Simplify your answer. The variable term must have a positive coefficient.)

18. Simplify the following complex fraction.

$$\frac{\frac{3}{5}}{\frac{23}{25}}$$

The quotient is .

(Simplify your answer. Type an integer or a fraction.)

19. Simplify.

$$\frac{1 + \frac{6}{y}}{1 - \frac{36}{y^2}}$$

$$\frac{1 + \frac{6}{y}}{1 - \frac{36}{y^2}} = \text{$$

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20. Simplify the complex fraction.

$$\frac{1 - \frac{7}{y+4}}{7 + \frac{1}{y+4}}$$

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Choose the simplified form.

A.  $\frac{y-3}{7y+29}$

B.  $\frac{-6}{8}$

C.  $\frac{y+3}{7y+29}$

D.  $\frac{y+4}{7}$

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1.  $7$

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2.  $-\frac{11}{5mn}$

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3.  $\frac{9}{8}$

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4.  $D$

---

5.  $-v - 5$

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6.  $\frac{6x^6q^6}{11}$

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7.  $\frac{49}{25}$

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8.  $\frac{y+3}{2y(y-3)}$

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9.  $\frac{y+3}{3}$

---

10.  $\frac{2x^4}{5y^3}$

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11.  $\frac{w+5}{w-5}$

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12.  $\frac{x+4}{(x+3)(5x-3)}$

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13.  $\frac{2z+13}{z-8}$

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14.  $C$

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15. 
$$\frac{6 - 10p}{5p^2}$$

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16. 
$$\frac{z}{(z - 5)(z - 6)}$$

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17. 
$$\frac{6}{w - 2}$$

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18. 
$$\frac{15}{23}$$

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19. 
$$\frac{y}{y - 6}$$

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20. A

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