

## Ms. Chan Algebra 2 PQ 9.4-9.6

**Multiple Choice**

Identify the letter of the choice that best completes the statement or answers the question.

**Simplify the rational expression. State any restrictions on the variable.**

\_\_\_\_\_ 1.  $\frac{q^2 - 2q - 48}{q - 8}$

a.  $q - 6; q \neq -8$

b.  $q + 6; q \neq 8$

c.  $-q - 6; q \neq 8$

d.  $-q + 6; q \neq -8$

\_\_\_\_\_ 2.  $\frac{w^2 + 2w - 48}{w^2 - 9w + 18}$

a.  $\frac{w + 8}{w - 3}; w \neq 6, w \neq 3$

b.  $\frac{-(w + 8)}{w - 3}; w \neq 3$

c.  $\frac{w + 8}{w - 3}; w \neq 6, w \neq -3$

d.  $\frac{-(w + 8)}{w - 3}; w \neq 6, w \neq 3$

**Multiply or divide. State any restrictions on the variables.**

\_\_\_\_\_ 3.  $\frac{10c^6}{2d^4} \cdot \frac{d^6}{7c^3}$

a.  $\frac{5c^3 d^2}{7}, c \neq 0, d \neq 0$

b.  $\frac{5c^9}{7d^{10}}, c \neq 0, d \neq 0$

c.  $\frac{7}{5c^3 d^2}, c \neq 0, d \neq 0$

d.  $\frac{5}{7}c^9 d^{10}, c \neq 0, d \neq 0$

\_\_\_\_\_ 4.  $\frac{n^2}{n + 6} \cdot \frac{n^2 + 12n + 36}{n^2 + 3n}$

a.  $\frac{n^2 + 6n}{n + 3}, n \neq -6, 0, -3$

b.  $\frac{n + 6}{n + 3}, n \neq -6, -3$

c.  $\frac{n^2 + 6n}{n + 3}, n \neq -6, -3$

d.  $\frac{n + 6}{n + 3}, n \neq -6, 0, -3$

\_\_\_\_\_ 5.  $\frac{y + 6}{y + 3} \div \frac{y - 6}{y^2 + 6y + 9}$

a.  $\frac{(y + 6)(y + 3)}{y - 6}, y \neq -3, 6$

b.  $\frac{(y + 6)(y + 3)}{y - 6}, y \neq -3, 6$

c.  $\frac{(y + 6)(y - 6)}{(y + 3)^2(y + 3)}, y \neq -3, -3, 6$

d.  $\frac{(y + 6)(y - 6)}{(y + 3)^2(y + 3)}, y \neq -3, -3$

- \_\_\_\_\_ 6. Find the least common multiple of  $x^2 + 8x + 15$  and  $x^2 + 9x + 20$ .
- a.  $(x - 3)(x - 5)(x - 4)$                       c.  $(x + 3)(x + 5)(x + 4)$   
 b.  $(x + 5)(x + 4)(x - 3)$                       d.  $(x + 3)(x - 4)(x + 5)$

**Add or subtract. Simplify if possible.**

- \_\_\_\_\_ 7.  $\frac{4}{n - 4} + \frac{3}{n^2 - 16}$
- a.  $\frac{4n - 13}{(n - 4)(n + 4)}$                       c.  $\frac{7}{n^2 + n - 20}$   
 b.  $\frac{7}{(n - 4)(n + 4)}$                       d.  $\frac{4n + 19}{(n - 4)(n + 4)}$

- \_\_\_\_\_ 8.  $\frac{k^2 + 2k - 48}{k^2 - 2k - 24} - \frac{5}{k + 4}$
- a.  $\frac{k + 8}{k + 4}$                       c.  $k + 3$   
 b.  $\frac{k + 3}{k + 4}$                       d.  $\frac{k^2 + 2k - 53}{k^2 - 2k - 24}$

- \_\_\_\_\_ 9.  $\frac{z^2 + 4z - 32}{z^2 - 6z + 8} + \frac{8}{z - 2}$
- a.  $z + 16$                       c.  $\frac{z + 8}{z - 2}$   
 b.  $\frac{z + 16}{z - 2}$                       d.  $\frac{z^2 + 4z - 24}{z^2 - 6z + 8}$

- \_\_\_\_\_ 10.  $\frac{w^2 - 3w - 18}{w^2 + 2w - 3} - \frac{w^2 - 7w + 6}{w^2 - 8w + 12}$
- a.  $\frac{-10w + 13}{(w - 1)(w - 2)}$                       c.  $\frac{2w^2 - 10w + 13}{2w^2 + 13}$   
 b.  $\frac{-6w + 11}{(w - 1)(w - 2)}$                       d.  $\frac{2w^2 + 11}{(w - 1)(w - 2)}$

**Simplify the complex fraction.**

- \_\_\_\_\_ 11.  $\frac{\frac{4}{3} - \frac{3}{z}}{\frac{3}{2z} + \frac{3}{2z}}$
- a.  $-3$                       b.  $\frac{2}{9}$                       c.  $-\frac{1}{3}$                       d.  $\frac{9}{2}$

Name: \_\_\_\_\_

ID: A

\_\_\_\_\_ 12.  $\frac{\frac{a-7}{a^2+5a-24}}{\frac{a+2}{a-3}}$

a.  $\frac{(a-7)(a+2)}{(a-3)(a+8)}$

b.  $\frac{a-7}{(a+2)(a+8)}$

c.  $\frac{(a-7)(a+8)}{(a+2)(a-8)}$

d.  $\frac{(a-7)(a+2)}{(a-3)^2(a+8)}$

**Solve the equation. Check the solution.**

\_\_\_\_\_ 13.  $\frac{5}{x+3} = \frac{3}{x-5}$

a. 17

b.  $\frac{34}{5}$

c. 7

d.  $\frac{9}{2}$

\_\_\_\_\_ 14.  $\frac{n+5}{n+1} = \frac{n+4}{n-4}$

a. -6

b. -8

c. 4

d. 8

\_\_\_\_\_ 15.  $\frac{7}{k} + \frac{5}{4k} = 5$

a.  $\frac{33}{4}$

b.  $\frac{33}{20}$

c.  $\frac{12}{25}$

d.  $\frac{27}{20}$

**Ms. Chan            Algebra 2            PQ 9.4-9.6**  
**Answer Section**

**MULTIPLE CHOICE**

- |            |         |  |
|------------|---------|--|
| 1. ANS: B  | DIF: L1 | REF: 9-4 Rational Expressions                        |
| 2. ANS: A  | DIF: L1 | REF: 9-4 Rational Expressions                        |
| 3. ANS: A  | DIF: L1 | REF: 9-4 Rational Expressions                        |
| 4. ANS: A  | DIF: L1 | REF: 9-4 Rational Expressions                        |
| 5. ANS: B  | DIF: L1 | REF: 9-4 Rational Expressions                        |
| 6. ANS: C  | DIF: L1 | REF: 9-5 Adding and Subtracting Rational Expressions |
| 7. ANS: D  | DIF: L1 | REF: 9-5 Adding and Subtracting Rational Expressions |
| 8. ANS: B  | DIF: L1 | REF: 9-5 Adding and Subtracting Rational Expressions |
| 9. ANS: B  | DIF: L1 | REF: 9-5 Adding and Subtracting Rational Expressions |
| 10. ANS: B | DIF: L2 | REF: 9-5 Adding and Subtracting Rational Expressions |
| 11. ANS: C | DIF: L1 | REF: 9-5 Adding and Subtracting Rational Expressions |
| 12. ANS: B | DIF: L1 | REF: 9-5 Adding and Subtracting Rational Expressions |
| 13. ANS: A | DIF: L1 | REF: 9-6 Solving Rational Equations                  |
| 14. ANS: A | DIF: L1 | REF: 9-6 Solving Rational Equations                  |
| 15. ANS: B | DIF: L1 | REF: 9-6 Solving Rational Equations                  |