NAME _Key_ _____ DATE_____ PERIOD _____

8 Chapter 8 Quiz 1

(Lessons 8–1 and 8–2)

SCORE _____

For Questions 1–4, simplify each expression.

1. $\dfrac{12a^3n}{x^2n^4} \cdot \dfrac{6x^7n^5}{9a^5n^2}$

2. $\dfrac{x^2 - 6x + 8}{3x - 12} \div \dfrac{x^2 - 4}{x^2 + 5x + 6}$

3. $\dfrac{2x^2 - x - 3}{x + 4} \cdot \dfrac{x^2 - 2x - 24}{x + 1}$

4. $\dfrac{\dfrac{p^2 - 3p}{p^2 - 6p + 9}}{\dfrac{20}{4p - 12}}$

5. **MULTIPLE CHOICE** For what value(s) of x is the expression $\dfrac{x^2 - 5x - 14}{x^2 + 7x + 10}$ undefined?

   A. $-5, 2$ B. $0, 2, 5$ C. -2 D. $0, 2$ E. $-5, -2$

Find the LCM of each set of polynomials.

6. $12a^2, 15b^3, 20ab^2$

7. $5x^2 - 20, 3x + 6$

8. $2t^2 - 3t + 1, 2t^2 + 7t - 4$

Simplify each expression.

9. $\dfrac{7}{m^2n} - \dfrac{2}{5mn}$

10. $\dfrac{5y}{y^2 - 3y} - \dfrac{7}{3 - y}$

1. $\dfrac{8x^5}{a^2}$

2. $\dfrac{x + 3}{3}$

3. $(2x - 3)(x - 6)$

4. $\dfrac{p}{5}$

5. E

6. $6ca^2b^3$

7. $15(x - 2)(x + 2)$

8. $(t - 1)(2t - 1)(t + 4)$

9. $\dfrac{35 - 2m}{5m^2n}$

10. $\dfrac{12}{y - 3}$

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NAME _____ DATE_____ PERIOD _____

8 Chapter 8 Quiz 2

(Lesson 8–3)

For Questions 1–4, determine the equations of any vertical asymptotes and the values of x for any holes in the graph of each rational function.
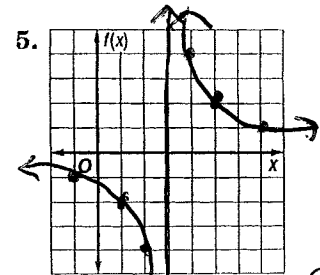
1. $f(x) = \dfrac{3}{x^2 + x - 2}$

2. $f(x) = \dfrac{x + 3}{x^2 + 2x - 3}$

3. $f(x) = \dfrac{x^2 + 2x - 8}{x + 4}$

4. $f(x) = \dfrac{x^2 - 3x}{x - 3}$

5. Graph $f(x) = \dfrac{4}{x - 3}$.

1. V.A. $x = -2, x = 1$

2. V.A. $x = 1$, Hole: $x = -3$

3. Hole: $x = -4$

4. Hole: $x = 3$

5.

VA $x = 3$

NAME _____ DATE _____ PERIOD _____

Chapter 8 Quiz 4

(Lesson 8–6)

For Questions 1–4, solve each equation or inequality.

1. $\dfrac{6}{x+2} = \dfrac{x-7}{x+2} + \dfrac{1}{4}$

2. $\dfrac{t-5}{t-3} = \dfrac{t-3}{t+3} + \dfrac{1}{t-3}$

3. $3 + \dfrac{2}{t} = \dfrac{8}{t}$ $\dfrac{3t}{t} + \dfrac{2}{t} = \dfrac{8}{t}$

   $3t + 2 = 8$

   $t = 2$

4. $\dfrac{6}{m+5} = 2$

5. **NUMBER THEORY** The ratio of two less than a number to six more than that number is 2 to 3. Find the number.

1. _____ 10 _____

2. _____ 9 _____

3. _____ $t = 2$ _____

4. _____ $m = -2$ _____

5. _____ 18 _____

8 Chapter 8 Mid-Chapter Test

SCORE _____

(Lessons 8–1 through 8–4)

Part I *Write the letter for the correct answer in the blank at the right of each question.*

1. For what value(s) of x is the expression $\dfrac{2x(x-3)}{(x+4)(x^2-9)}$ undefined?

   A. $-4, 9$ **B.** $-4, -3, 0, 3$ **C.** $-4, 0, 3, 9$ **D.** $-4, -3, 3$ 1. $\underline{D}$

For Questions 2–5, simplify each expression.

2. $\dfrac{9y^2-1}{2y-1}\cdot\dfrac{1-2y}{3y-1}$

   F. $-3y-1$ **G.** $3y+1$ **H.** $-3y+1$ **J.** $3y-1$ 2. $\underline{F}$

3. $\dfrac{c^2-c-20}{c^2-6c+5}\div\dfrac{c^2-16}{3c-3}$

   A. $\dfrac{3}{c-4}$ **B.** $\dfrac{3}{c+4}$ **C.** $\dfrac{c+4}{3}$ **D.** $\dfrac{c-4}{3}$ 3. $\underline{A}$

4. $\dfrac{\frac{3m^2-12}{4m^2+8m}}{\frac{6m-12}{8m^2+16m}}$

   F. $\dfrac{9(m-2)}{16m^2(m+2)}$ **G.** $\dfrac{m(m^2-4)}{m-2}$ **H.** $m+2$ **J.** $\dfrac{4(m+2)}{3}$ 4. $\underline{H}$

5. $\dfrac{1}{5}-\dfrac{3}{4w}+\dfrac{3}{10w}$

   A. $\dfrac{4w-21}{20w}$ **B.** $\dfrac{4w-9}{20w}$ **C.** $\dfrac{1}{20w}$ **D.** $-\dfrac{1}{4w}$ 5. $\underline{B}$

Part II

6. Simplify $\dfrac{x}{x^2+x-6}-\dfrac{1}{x^2-6x+8}$.

   6. $\dfrac{x^2-5x-3}{(x+3)(x-2)(x-4)}$

For Questions 7 and 8, find the LCM for each set of polynomials.

7. $12s^3, 18s^2t, 24t^4$ 8. $9c-15, 21c-35$

   7. $72s^3t^4$

   8. $21(3c-5)$

9. Determine the equations of any vertical asymptotes and the values of x for any holes in the graph of $f(x)=\dfrac{x+3}{x^2-x-12}$.

   9. V.A. $x=4$, Hole: $x=-3$

10. Graph $f(x)=\dfrac{4}{(x+2)^2}$.

    10.

    $x=-2$ VA