

Chapter 8 Mid-Chapter Practice Test

SCORE _____

(Lessons 8-1 through 8-3)

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 $\frac{x(x-5)}{(x+2)(x^2-16)}$ undefined?

$$(x+2)(x+4)(x-4) = 0$$

undefined
1. Ⓐ $x = -2, 4, -4$

For Questions 2-5, simplify each expression.

2. $\frac{4y^2-1}{3y-1} \cdot \frac{1-3y}{2y+1} = \frac{(2y+1)(2y-1)}{(3y-1)} \cdot \frac{-(3y-1)}{(2y+1)}$

2. $-(2y-1)$

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

$$\frac{(x-2)(x-4)}{3(x-4)} \cdot \frac{(x+2)(x+3)}{(x+2)(x+3)}$$

$$\frac{4m^2-36}{6m^2+18} \times \frac{3m^2+9}{2m-6} = \frac{4(m^2-9)}{6(m^2+3)} \cdot \frac{3(m^2+3)}{2(m-3)}$$

$$\frac{4(m+3)(m-3)}{6(m^2+3)} \cdot \frac{3(m^2+3)}{2(m-3)}$$

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

4. $\frac{4m^2-36}{6m^2+18} \cdot \frac{3m^2+9}{2m-6}$

4. $m+3$

5. $\frac{1}{6} - \frac{5}{15w} + \frac{3}{10w}$

LCD: $30w$

$$\frac{5w}{30w} - \frac{10}{30w} + \frac{9}{30w} = \frac{5w-1}{30w}$$

5. $\frac{5w-1}{30w}$

Part II

6. Simplify $\frac{x}{x^2+5x+6} - \frac{1}{x^2+x-6} = \frac{x}{(x+3)(x+2)} - \frac{1}{(x-2)(x+3)} = \frac{x^2-2x-x-2}{(x+3)(x+2)(x-2)}$

6. $\frac{x^2-3x-2}{(x+3)(x+2)(x-2)}$

7. 60926^3

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

7. $12a^2, 15b^3, 20ab^2$

LCM: $2 \cdot 2 \cdot 3 \cdot 5 \cdot a \cdot b \cdot b \cdot b$

8. $5x^2-20, 3x+6$

LCM: $5 \cdot 3 \cdot (x+2)(x-2)$

9. Determine the equations of any asymptotes in the graph of $f(x) = \frac{x^2+4x}{x^2+4x-12}$

8. $15(x+2)(x-2)$

9. _____

10. Graph $f(x) = \frac{-2}{(x+4)}$

