

Chapter 6 & 7 Test

Directions: Read each question and answer it to the best of your ability. Show all of your work! Partial credit can be given only for correct work relative to the problem. Make sure you circle your answer. No Calculators!

Please turn OFF your phone/pager and put it OUT OF VIEW.

Calculations:

1. (4 pts each) Simplify completely:

a. $\frac{x^2 + 3x}{4x + 12}$

b. $\frac{x^2 + 2x - 8}{x^2 - 4}$

Answer: _____

Answer: _____

2. (4pts each) Perform the indicated operation:

a. $\frac{x}{x-5} \cdot \frac{3x-15}{x^2+3x}$

b. $\frac{5x+10}{10x} \div \frac{x^2-4}{4x^2}$

Answer: _____

Answer: _____

c. $\frac{3x}{x^2-9} + \frac{-9}{x^2-9}$

d. $\frac{x^2}{x-1} + \frac{4-5x}{x-1}$

Answer: _____

Answer: _____

e. $\frac{4x+4}{x^2+4x} - \frac{2x+4}{x^2+4x}$

f. $\frac{x-3}{x+3} - \frac{18}{x^2+3x}$

Answer: _____

Answer: _____

3. (4pts) Simplify completely:

a. $\frac{\frac{3y^3}{35x}}{\frac{6y}{5x^2}}$

b. $\frac{1 - \frac{1}{2x}}{\frac{1}{5x} - \frac{1}{10x^2}}$

Answer: _____

Answer: _____

4. (5pts) Divide using long division:

$$\frac{y^2 + 3y - 2}{y + 1}$$

Answer: _____

3. (5pts each) Determine the solutions of the quadratic equation:

a. $x^2 - 7x - 30 = 0$

b. $4x^2 - 12x = 0$

Answer: _____

3. $5x^2 + 6x - 8 = 0$

Answer: _____

d. $x^2 - 2x = 8$

Answer: _____

Answer: _____

4. (5pts) Determine the solutions of the quadratic equation:
 $(x - 6)(x + 2) = 20$

Answer: _____

4. (5pts) Use the *quadratic formula* to determine the solutions of the quadratic equation
 $x^2 - 5x - 2 = 0$

Answer: _____

5. (5pts) Karin is cutting a rectangular canvas for a painting she plans to do. She wants the canvas to have an area of 144 square inches. She also wants the length to be 2 inches less than twice the width. What will be the dimensions of the frame?

Answer: _____

6. (5 pts each) Solve each of these expressions: (1) *Determine the value x can not be* (2) *Solve the rational equation.*

a. $\frac{1}{2} - \frac{1}{x} = \frac{1}{4} + \frac{1}{2x}$

b. $\frac{x}{x+2} + 1 = \frac{-10}{x+2}$

Answer: _____

Answer: _____

c. $\frac{5x}{x-1} = \frac{5}{x-1} + 3$

Answer: _____

7. (5pts) In 2 minutes, a large conveyor belt moves 300 pounds of recyclable aluminum from the delivery truck to a storage area. A smaller belt moves 300 pounds of aluminum from the delivery truck to a storage area in 6 minutes. If both belts are used, find how long it takes to move the same amount of aluminum to the storage area. (Hint: make a chart)

Answer: _____