

Name Key

Date _____ Pd _____

Bridge to Algebra 2

Quiz Review 7.1 - 7.2

- Use when you get it right all by yourself
- S** Use when you did it all by yourself, but made a silly mistake
- H** Use when you could do it alone with a little help from teacher or peer
- G** Use when you completed the problem in a group
- X** Use when a question was attempted but wrong (get help)
- N** Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Vocabulary terms	1 - 5		
Domain restriction in interval notation	6	7	8
Simplifying expressions	9, 10, 12	11	16
Synthetic Substitution	13		
Real world application		14, 15	
Multiplying Rational Expressions	17	18	19
Dividing Rational Expressions	20	21	22

Vocabulary Check: Use the choices below to fill in each blank.

- 1 true rational simplified -1 false domain 0 opposites reciprocals
- A rational expression is an expression that can be written as the quotient of P and Q of two polynomials P and Q as long as Q does not equal 0.
 - A rational expression is undefined if the denominator is 0.
 - The domain of the rational function $f(x) = \frac{2}{x}$ is all real numbers except 0.
 - A rational expression is simplified if the numerator and denominator have no common factors other than 1 or -1.
 - The expression $\frac{x}{2y}$ and $\frac{2y}{x}$ are called reciprocals.

Restrict the domain of each rational expression in interval notation. Show all work for full credit.

6. $f(x) = \frac{4-3x}{2}$

$D: (-\infty, \infty)$

7. $s(t) = -\frac{5t+t^2}{3t}$

$D: (-\infty, 0) \cup (0, \infty)$

8. $g(x) = \frac{-2}{2x+5}$

$D: (-\infty, -\frac{5}{2}) \cup (-\frac{5}{2}, \infty)$

Simplify each expression. Show all work for full credit.

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

1

10. $\frac{-4x-4y}{x+y}$

-4

11. $\frac{12x^2+4x-1}{2x+1}$

$6x-1$

12. $\frac{49-y^2}{y-7}$

$-(y+7)$

Find each function. Show all work for full credit.

13. If $f(x) = \frac{x-2}{-5+x}$, find...

a) $f(-5)$.

$\frac{7}{10}$

B) $f(0)$.

$\frac{2}{5}$

C) $f(10)$.

$\frac{8}{5}$

Solve the real word problem. Show all work for full credit.

14. The function $f(x) = \frac{100,000x}{100-x}$ models the cost in dollars for removing x percent of the pollutants from a bayou in which a nearby company dumped creosol.

a) Find the cost of removing 20% of the pollutants from the bayou.

$$\$25,000$$

b) Find the cost of removing 60% of the pollutants and then 80% of the pollutants.

$$\$150,000; \$400,000$$

c) Find the domain of function f .

$$D: (-\infty, 100) \cup (100, \infty)$$

15. Calculating body-mass index is a way to gauge whether a person should lose weight. Doctors recommend that body-mass index values fall between 18.5 and 25. The formula for body-mass index B is $B = \frac{703w}{h^2}$ where w is weight in pounds and h is height in inches. Should a 148-pound person who is 5 feet 6 inches tall lose weight?

$$\text{No } \approx 24 \text{ is between } 18.5 \text{ \& } 25.$$

16. Does $\frac{x+7}{x}$ simplify to 7? Why or Why not, show your explanation in words if you need to?

$$\text{No, all or nothing}$$

Find each product and simplify completely, if possible. Show all work for full credit.

17. $\frac{9x^2}{y} \cdot \frac{4y}{3x^3}$

$$\frac{12}{x}$$

18. $\frac{4x-24}{20x} \cdot \frac{5}{x-6}$

$$\frac{1}{x}$$

19. $\frac{x^2+9x+20}{x^2-15x+44} \cdot \frac{x^2-11x+28}{x^2+12x+35}$

$$\frac{(x+4)(x-7)}{(x-11)(x+7)}$$

Find each quotient and simplify completely, if possible. Show all work for full credit.

20. $\frac{5x^7}{2x^5} \div \frac{15x}{4x^3}$

$$\frac{2}{3} x^4$$

21. $\frac{(x+3)^2}{5} \div \frac{5x+15}{25}$

$$(x+3)$$

22. $\frac{9x^5}{a^2-b^2} \div \frac{27x^2}{3b-3a}$

$$\frac{-x^3}{(a+b)}$$

CYU Reflection: How far can you go: basic, intermediate, or advanced?

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

