

Name Key
 Bridge to Algebra 2

Date _____ Pd _____
 Quiz Review 5.6, 5.7, 7.1, & 7.2 DAY TWO CYU

- 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
Dividing	1		
Long Division		2 - 7	
Synthetic Division		2 - 7	
Domain Restriction	8	9	10
Simplifying Rational Expressions	11	12	13
Real-World Application		14	
Multiplying Rational Expressions	15	16	18, 19
Dividing Rational Expressions	22, 23	17, 20	21

1. Divide. Show all work to earn full credit. $\frac{4x^2 + 24xy - 7x}{8xy}$

$$\frac{x}{2y} + 3 - \frac{7}{8y}$$

Use long division & synthetic division to divide the two polynomials. Show work for both methods to earn full credit.

2. $(3x^2 + 12x - 4) \div (x - 2)$

$$3x^2 + 6x + 24 + \frac{44}{x-2}$$

3. $(3x^2 + 2x - 4x - 1) \div (x + \frac{3}{2})$

$$3x^2 - \frac{5}{2}x - \frac{1}{4} - \frac{5}{8(x + \frac{3}{2})}$$

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

$$x^4 - x^3 + x^2 - x + 1 - \frac{2}{x+1}$$

$$5. \frac{x^3-81}{x-3}$$

$$x^2 + 3x + 9 - \frac{54}{x-3}$$

$$6. \frac{x^3-x^2+3x^4-2}{x-4}$$

$$3x^3 + 13x^2 + 5/x + 204 + \frac{814}{x-4}$$

$$7. \frac{3x^4-2x^2+10}{x+2}$$

$$3x^3 - 6x^2 + 10x - 20 + \frac{50}{x+2}$$

Find the domain restriction for each rational function.

$$8. f(x) = \frac{3-5x}{7}$$

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

$$9. g(x) = \frac{-3x^2}{x-5}$$

$$D: (-\infty, 5) \cup (5, \infty)$$

$$10. h(x) = \frac{20}{3x^2-48}$$

$$D: (-\infty, -4) \cup (-4, 4) \cup (4, \infty)$$

Simplify each rational expression. Show all work for full credit.

11. $\frac{2x}{2x^2-2x}$

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

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

$$\frac{1}{(x-7)}$$

13. $\frac{2x^2+4x-30}{x^2+x-20}$

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

14. The average cost (per bookcase) of manufacturing x bookcases is given by the rational function

$$C(x) = \frac{35x+4200}{x}$$

a) Find the average cost per bookcase of manufacturing 50 bookcases.

$$C(50) = 119 \quad \$ 119$$

b) Find the average cost per bookcase of manufacturing 100 bookcases.

$$C(100) = 77 \quad \$ 77$$

Perform each indicated operation and simplify.

15. $\frac{15x^3y^2}{z} \cdot \frac{z}{5xy^3}$

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

16. $\frac{x^2-9}{x^2-4} \cdot \frac{x-2}{x+3}$

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

17. $\frac{x^2-5x-24}{x^2-x-12} \div \frac{x^2-10x+16}{x^2+x-6}$

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

$$18. \frac{x^2+x-42}{x-3} \cdot \frac{(x-3)^2}{x+7}$$

$$(x-6)(x-3)$$

$$19. \frac{2a+2b}{3} \cdot \frac{a-b}{a^2-b^2}$$

$$\frac{2}{3}$$

$$20. \frac{2x^2-9x+9}{8x-12} \div \frac{x^2-3x}{2x}$$

$$\frac{\cancel{x}(2x-3)}{\cancel{2x}}$$

$$\boxed{\frac{(2x-3)}{2}}$$

$$21. \frac{x^2-y^2}{x^2+xy} \div \frac{3x^2-2xy-y^2}{3x^2+6x}$$

$$\frac{3(x+y)}{(3x+y)}$$

$$22. \frac{x-y}{4} \div \frac{y^2-2y-xy+2x}{16x+24}$$

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

$$23. \frac{5+x}{7} \div \frac{xy+5y-3x-15}{7y-35}$$

$$\frac{(y-5)}{(y-3)}$$

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.

