Algebra Lesson 11-2B Multiplying and Dividing Rational Expressions

Simplify the Rational Expression

Multiply.

1. $\frac{7}{3} \cdot \frac{5x}{12}$

2. $\frac{3}{t} \cdot \frac{4}{t}$

3. $\frac{5}{3a^2} \cdot \frac{8}{a^3}$

4. $\frac{m-2}{m+2} \cdot \frac{m}{m-1}$

5. $\frac{2x}{x+1} \cdot \frac{x-1}{3}$

6. $\frac{6x^2}{5} \cdot \frac{2}{x+1}$

7. $\frac{4c}{2c+2} \cdot \frac{c+1}{c-1}$

8. $\frac{5x^3}{x^2} \cdot \frac{3x^4}{6x}$

9. $\frac{3t}{t-2} \cdot \frac{3t-6}{t^2}$

10. $\frac{m-2}{3m+9} \cdot \frac{2m+6}{2m-4}$

11. $\frac{x-5}{4x+6} \cdot \frac{6x+9}{3x-15}$

12. $\frac{4x+1}{5x+10} \cdot \frac{30x+60}{2x-2}$

13. $\frac{4t+4}{t-3} \cdot (t^2 - t - 6)$

14. $\frac{2m+1}{3m-6} \cdot (9m^2 - 36)$

15. $(x^2 - 1) \cdot \frac{x-2}{3x+3}$

29. $\frac{t^2+5t+6}{t-3} \cdot \frac{t^2-2t-3}{t^2+3t+2}$

Due Next Class: 11-2B p.537 #16-19 all; 21-27 odds; 30-32 all

Due Today: 11-2A p.537 #1-15 odds; #29

11. $\frac{x-5}{4x+6} \cdot \frac{6x+9}{3x-15}$

$$\frac{(x-5)\cdot 3(2x+3)}{2(2x+3)\cdot 3(x-5)} = \frac{1}{2}$$

Name
Date
Period

$$\frac{m-2}{3m+9} \cdot \frac{2m+6}{2m-4}$$

$$\frac{(m-2)\,2(m+3)}{3(m+3)\,2(m-2)} = \frac{1}{3}$$

$$\frac{2}{3} \div \frac{7}{8}$$

$$\frac{2}{3} \cdot \frac{8}{7}$$

Dividing Rational Expressions: Multiply by the Reciprocal

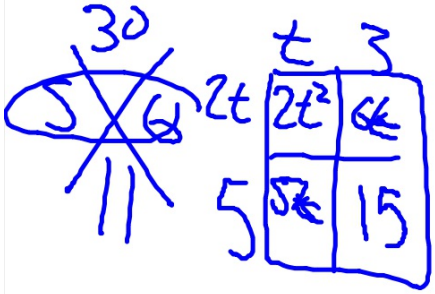
$$\frac{(2t^2 + 11t + 15)}{t + 1} \div \frac{2t + 5}{t + 3}$$

$$10 \div 2 = 5$$

$$10 \cdot \frac{1}{2} = \frac{10}{2} = 5$$

$$\frac{(2t^2 + 11t + 15)}{t + 1} \cdot \frac{t + 3}{2t + 5}$$

$$\frac{(2t^2 + 11t + 15)}{t + 1} \cdot \frac{t + 3}{2t + 5}$$



$$\frac{(2t+5)(t+3)(t+3)}{(t+1)(2t+5)}$$

$$\frac{(t+3)^2}{(t+1)}$$

22. $\frac{y-4}{10} \div \frac{4-y}{5}$

$\frac{y-4}{10_2} \cdot \frac{5^1}{4-y}$

$-1 \frac{\times 3}{5-x}$

$\frac{y-4}{4-y}$ $\frac{-2}{2} = -1$

$\frac{6}{-6} = -1$

p.537 #16-19 all; #21-27 odds; #30-32 all

Find the reciprocal of each expression.

16. $\frac{2}{x+1}$ $\frac{x+1}{2}$ **17.** $\frac{-6d^2}{2d-5}$ **18.** c^2-1 $\frac{1}{c^2-1}$ **19.** $s+4$ $\frac{1}{s+4}$

Divide.

20. $\frac{x-1}{x+4} \div \frac{x+3}{x+4}$ **21.** $\frac{3t+12}{5t} \div \frac{t+4}{10t}$ **22.** $\frac{y-4}{10} \div \frac{4-y}{5}$

23. $\frac{x-3}{6} \div \frac{3-x}{2}$ **24.** $\frac{x^2+6x+8}{x^2+x-2} \div \frac{x+4}{2x+4}$ **25.** $\frac{2n^2-5n-3}{4n^2-12n-7} \div \frac{4n+5}{2n-7}$

26. $\frac{3x+9}{x} \div (x+3)$ **27.** $\frac{11k+121}{7k-15} \div (k+11)$ **28.** $\frac{x^2+10x-11}{x^2+12x+11} \div (x-1)$

Multiply or divide.

29. $\frac{t^2+5t+6}{t-3} \cdot \frac{t^2-2t-3}{t^2+3t+2}$ **30.** $\frac{c^2+3c+2}{c^2-4c+3} \div \frac{c+2}{c-3}$

31. $\frac{7t^2-28t}{2t^2-5t-12} \cdot \frac{6t^2-t-15}{49t^3}$ **32.** $\frac{5x^2+10x-15}{5-6x+x^2} \div \frac{2x^2+7x+3}{4x^2-8x-5}$

1. $\dfrac{7t^2 - 28t}{2t^2 - 5t - 12} \cdot \dfrac{6t^2 - t - 15}{49t^3}$

$\dfrac{7t(t-4)}{(2t+3)(t-4)} \dfrac{(2t+3)(3t-5)}{49t^3}$