

8.2 Day 2  
Multiplying and Dividing  
Rational Expressions  
GOAL: SAME AS YESTERDAY

**LOOK OVER THESE!**

**Review:** Simplify. Identify any x-values for which the expression is undefined.

1.  $\frac{(x-5)(x-1)}{x^2 - 6x + 5}$   
 $\frac{(x-5)(x-1)}{x^2 - 3x - 10}$   
 $\frac{(x-5)(x-1)}{(x-5)(x+2)}$  ← Excluded Values  $x \neq 5$   
 $x \neq -2$

**Answer:**  $\frac{x-1}{x+2}$

**Multiply or divide. Assume that all expressions are defined.**

2.  $\frac{x+1}{3x+6} \cdot \frac{6x+12}{x^2-1}$   
 $\frac{2(x+1)}{3(x+2)} \cdot \frac{2(x+2)}{(x+1)(x-1)}$   
 $\frac{2}{x-1}$

3.  $\frac{x^2+4x+3}{x^2-4} \cdot \frac{x^2+2x-3}{x^2-6x+8}$   
 $\frac{(x+3)(x+1)}{(x+2)(x-2)} \cdot \frac{(x-4)(x-1)}{(x+3)(x-1)}$   
 $\frac{(x+1)(x-4)}{(x+2)(x-1)}$

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4. Simplify  $\frac{4x - x^2}{x^2 - 2x - 8}$ . Identify any x values for which the expression is undefined.

<https://www.youtube.com/watch?v=vDvo2WA1w7E>

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5. Simplify  $\frac{10 - 2x}{x - 5}$ . Identify any x values for which the expression is undefined.

<https://www.youtube.com/watch?v=pc0vMH8kxw>

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**Try On OWN!!!!**

6. Simplify  $\frac{-x^2 + 3x}{2x^2 - 7x + 3}$ . Identify any x values for which the expression is undefined.

Show Answer when students are done

$x \neq \frac{1}{2}$   $x \neq 3$

$\frac{-x}{2x-1}$

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**Solve. Check your solution.**

7.  $\frac{x^2 - 25}{x - 5} = 14$

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

[https://www.youtube.com/watch?v=EP2XvaJA\\_-Y](https://www.youtube.com/watch?v=EP2XvaJA_-Y)

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**Try On OWN!!!!**

**Solve. Check your solution.**

9.  $\frac{x^2 + x - 12}{x + 4} = -7$

10.  $\frac{4x^2 - 9}{2x + 3} = 5$

Show answers when students are done

9.  $\frac{(x+4)(x-3)}{x+4} = -7$   
 $x-3 = -7$   
 $x = -4$   
 OH NO!!  
**No Solution**

10.  $\frac{(2x+3)(2x-3)}{2x+3} = 5$   
 $2x-3 = 5$   
 $2x = 8$   
 $x = 4$

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Assignment p. 580 (15-34)

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