

No clickers & yes calculators

Have out the 4.4 - 4.5 w.s. & pg. 156 to correct.

Get the 4.6 notes from the brown table.

$$\frac{32x^4y}{3xy^2} \cdot \frac{21y^4}{8xy^2} = \frac{672x^4y^5}{24x^2y^4}$$

$$\frac{252x^3y^4}{84x^5y^2} = \frac{3y^2}{x^2}$$

$$\frac{28x^2y}{x^{-2}}$$

Section 4-6 Solve Rational Equations.

Objective: Students will solve rational equations.

A1.2.5 Solve polynomial equations and equations involving rational expressions...and justify the steps in the solution.

May 3-7:22 AM

Two ways to solve depending on how many pieces there are

- ① Proportions: Two equal fractions
 - Meaning one fraction on each side
 - Can be solved by setting the cross products equal to one another *mult. Diagonally*
 - *+ Solve for x*
- Rational Equations: one side contains more than one fraction
 - You cannot use cross products!
 - You must use the Least Common Denominator

$x+1=0$
EXAMPLE 1 Solve a proportion by cross multiplying

Solve: $\frac{3}{x+1} = \frac{9}{4x+1}$ $x = \frac{1}{4}$ Write original equation.

$x = -1$
 $3(4x+1) = 9(x+1)$ Cross multiply. Distributive property

$12x + 3 = 9x + 9$ Subtract x 's from each side.

$-9x$ Subtract # from each side.

$3x + 3 = 9$ Divide

$\frac{3x}{3} = \frac{6}{3}$
 $x = 2$

GUIDED PRACTICE for Proportions

1. $\frac{3}{5x} = \frac{2}{x-7}$ $x = -3$

$$3x - 21 = 10x$$

$$-3x - 21 = 10x$$

$$\frac{-21}{7} = \frac{7x}{7}$$

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

$$-4x + 12 = 5x + 15$$

$$-4x + 12 = 5x + 15$$

$$-9x + 12 = 15$$

$$-9x = 3$$

$$x = -\frac{1}{3}$$

3. $\frac{1}{2x+5} = \frac{x}{11x+8}$

$$11x + 8 = 2x^2 + 5x$$

$$-11x - 8 = 2x^2 - 5x$$

$$0 = 2x^2 - 6x - 8$$

$$0 = \frac{2}{2}(x^2 - 3x - 4)$$

$$0 = x^2 - 3x - 4$$

$$(x-4)(x+1)$$

$$x = 4 \quad x = -1$$

Extraneous Solutions

- Be sure to check for extraneous solutions by substituting back into the original equation.

Example: 4 check for extraneous solutions.

Solve $\frac{x}{x-1} = \frac{x+3}{-2x+2}$

$$-2x^2 + 2x = x^2 + 2x - 3$$

$$-3x^2 = -3$$

$$x^2 = 1$$

$$(x+1)(x-1)$$

$$x = -1 \quad x = 1$$

~~$x = 1$~~

Example 5:

Solve $\frac{x}{x+3} = \frac{x-4}{-x-3}$

$$-x^2 - 3x = x^2 - x - 12$$

$$-2x^2 - 2x - 12 = 0$$

$$x^2 + x + 6 = 0$$

$$(x+3)(x+2) = 0$$

$$x = -3 \quad x = -2$$

~~$x = -3$~~

- ① Pg. 160
1 + 2
- ② 3-10 w.s.
Pick 5
- ③ Ch 4 Review

May 18-1:55 PM