

Trig 4.6

Solve rational equations
Solve rational inequalities

Whiteboards: (if time)

Lesson 4-6 (Pages 243–250)

Solve each equation or inequality.

1. $\frac{6}{x} + x = 5$

2. $\frac{7}{y-1} - \frac{4}{y} = \frac{y}{y-1}$

Clear denom

Solve

Check answers

$$5. \frac{1}{3w} + \frac{4}{5w} \leq \frac{1}{15}$$

$$6. \frac{x-2}{x} < \frac{x-4}{x-6}$$

Use related equations:

1. find excluded values
2. find solutions to related equation

Test intervals (test point)

Where is it true?

10. $1 + \frac{5}{a-1} \leq \frac{7}{6}$

1. find excluded values
2. find solutions to related equation
3. test intervals on number line
4. Where is it true? $<$ $>$ etc.

29. $\frac{(x-3)(x-4)}{(x-5)(x-6)^2} \leq 0$

$$17) \frac{\frac{4}{12(a+1)(a-1)} 7a}{3a+3} - \frac{\frac{3}{12(a+1)(a-1)} 5}{4a-4} = \frac{\frac{6}{12(a+1)(a-1)} 3a}{2a+2} \quad \frac{2}{y} - 1 = \frac{6y(y-1)}{y-1}$$

$$2y - 2 - y^2 + y = 6y$$

$$(4a-4)(7a) - (3a+3)(5) = (6a-6)(3a)$$

$$3y - 2 - y^2 = 6y$$

$$0 = y^2 + 3y + 2$$

$$0 = (y+2)(y+1)$$

$$\boxed{\begin{array}{l} y = -2 \quad y = -1 \\ y = 0 \quad y = 1 \end{array}}$$

$$28a^2 - 28a - 15a - 15 = 18a^2 - 18a$$

$$10a^2 - 25a - 15 = 0$$

$$2a^2 - 5a - 3 = 0$$