

Quick Quiz Review

You are about to be handed back the quiz you took last Thursday.

You can choose to pay attention & apply what you hear to the quiz.

If you do not want to pay attention, please be quiet so that your peers can.



Solve the equation. Check for extraneous solutions.

$$8\sqrt{x} - 32 = 0$$

The goal is to get square root signs by themselves.

$$8\sqrt{x} = 32$$

Add 32 to both sides

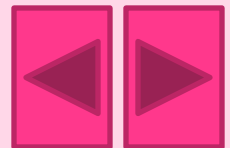
$$\sqrt{x} = 4$$

Divide both sides by 8

$$(\sqrt{x})^2 = 4^2$$

Square both sides

$$x = 16$$



Solve the equation. Check for extraneous solutions.

$$\sqrt{7x - 6} = \sqrt{x}$$

$$\left(\sqrt{7x - 6}\right)^2 = \left(\sqrt{x}\right)^2 \quad \text{Square both sides}$$

$$7x - 6 = x$$

Subtract $7x$ from both sides

$$\begin{array}{r} -7x \quad -7x \\ \hline \end{array}$$

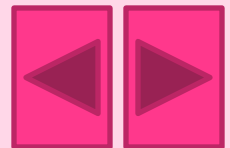
$$\begin{array}{r} -6 = -6x \\ \hline \end{array}$$

Divide by -6

$$\begin{array}{r} -6 = -6 \\ \hline \end{array}$$

$$x = 1$$

Wait...not finished yet...



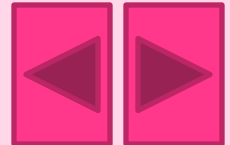
Solve the equation. Check for extraneous solutions.

$$\sqrt{7x - 6} = \sqrt{x}$$

$$\sqrt{7(1) - 6} = \sqrt{1}$$

$$\sqrt{1} = \sqrt{1}$$

$$\pm 1 = \pm 1$$



Solve the equation. Check for extraneous solutions.

$$x = \sqrt{2x + 24}$$

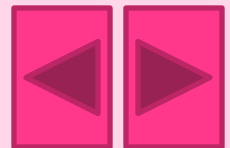
$$x^2 = (\sqrt{2x + 24})^2 \quad \text{Square both sides}$$

$$x^2 = 2x + 24 \quad \text{Notice } x \text{ stays squared}$$

$$x^2 - 2x - 24 = 0 \quad \text{If } x^2, \text{ move to one side}$$

$$(x - 6)(x + 4) = 0 \quad \text{Factor}$$

Wait...not finished yet...



$$(x - 6)(x + 4) = 0$$

$$\begin{array}{r} x - 6 = 0 \quad x + 4 = 0 \\ +6 \quad +6 \quad -4 \quad -4 \end{array}$$

$$x = 6$$

$$x = -4$$

Solve for x

$$x = \sqrt{2x + 24}$$

Wait...not finished yet...

$$6 = \sqrt{2(6) + 24}$$

$$6 = \sqrt{36}$$

$$6 = 6$$

YES a solution

$$-4 = \sqrt{2(-4) + 24}$$

$$-4 = \sqrt{16}$$

$$-4 \neq 4$$

NO..not a solution



$$(4x^2 - 25) \div (-5 + 2x)$$

$$(4x^2 - 25) \div (2x - 5)$$

Put in the correct order

$$[(2x)^2 - 5^2] \div 2x - 5$$

Look for perfect squares

$$(2x - 5)(2x + 5) \div 2x - 5$$

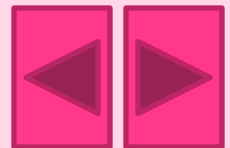
Factor

$$\frac{\cancel{(2x - 5)}(2x + 5)}{\cancel{2x - 5}}$$

Rewrite as a fraction

I must see your work...

$$2x + 5$$



$$(18x^3 - 24x^2 + 12x) \div (6x)$$

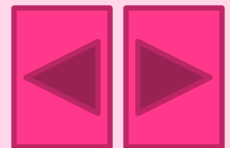
$$\frac{18x^3}{6x} - \frac{24x^2}{6x} + \frac{12x}{6x}$$

$$3x^2 - 4x + 2$$

When dividing by a monomial, just do each separately!

Don't forget signs & x

Anything divided by itself is 1



$$(22x^4 - 18x^2 + 6x) \div (-2x)$$

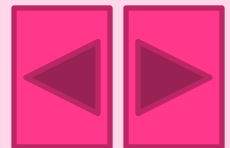
$$\frac{22x^4}{-2x} - \frac{18x^2}{-2x} + \frac{6x}{-2x}$$

When dividing by a monomial, just do each separately!

$$-11x^3 + 9x - 3$$

Don't forget signs & x

Minus a negative is a positive



$$(9x^2 + 5x - 6) \div (x + 1)$$

$$\begin{array}{r} 9x - 4 \\ x + 1 \overline{) 9x^2 + 5x - 6} \\ \underline{-(9x^2 + 9x)} \downarrow \\ -4x - 6 \\ \underline{-(-4x - 4)} \\ -2 \end{array}$$

I must see your work...

If a trinomial is divided by a binomial, you must use long division

What times $(x+1) = 9x^2$

$$9x(x+1) = 9x^2 + 9x$$

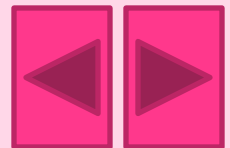
$$9x^2 - 9x^2 = 0$$

$$5x - 9x = -4x$$

What times $(x+1) = -4x$

$$-6 - 4 = -6 + 4 = -2$$

Wait...not finished yet...



I must see your work...

$$(9x^2 + 5x - 6) \div (x + 1)$$

$$\begin{array}{r} 9x - 4 \\ x + 1 \overline{) 9x^2 + 5x - 6} \\ \underline{-(9x^2 + 9x)} \\ -4x - 6 \\ \underline{-(-4x - 4)} \\ -2 \end{array}$$

$9x - 4$ $\xrightarrow{\text{blue arrow}}$ $\frac{-2}{x + 1}$

$-(9x^2 + 9x)$ $\xrightarrow{\text{red arrow}}$ $x + 1$



Simplify & find the excluded values.

$$\frac{6x - 24}{x - 4}$$

$$\frac{\cancel{6(x - 4)}}{\cancel{x - 4}}$$

Factor first...this is the Simplify part

I have to see this to know you know how to simplify.

6

This is the excluded value part.

$$\begin{array}{r} 6x - 24 = 0 \\ +24 \quad +24 \\ \hline \end{array}$$

$$\begin{array}{r} 6x = 24 \\ x = 4 \end{array}$$

$$\begin{array}{r} x - 4 = 0 \\ +4 \quad +4 \\ \hline \end{array}$$

$$x = 4$$

If you put in 40 for x, the fraction will be undefined!



Simplify & find the excluded values.

$$\frac{x+11}{x^2-121}$$
$$\frac{\cancel{x+11}}{\cancel{(x+11)}(x-11)}$$

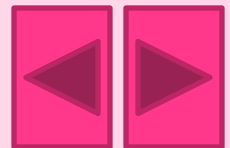
$$\frac{1}{x-11}$$

$$\begin{array}{r} x-11=0 \\ +11 \quad +11 \\ \hline x=11 \end{array}$$

$$\begin{array}{r} x+11=0 \\ -11 \quad -11 \\ \hline x=-11 \end{array}$$

**Remember the search for perfect squares?
I have to see this to know you know how to simplify.**

This is the excluded value part.



Simplify & find the excluded values.

$$\frac{x-4}{x^2+11x-24}$$
$$\frac{x-4}{(x+8)(x-3)}$$

Factor the denominator.

**I have to see this
to know you know
how to simplify.**

$$x - 3 = 0$$

$$\begin{array}{r} +3 \quad +3 \\ \hline \end{array}$$

$$x = 3$$

$$x + 8 = 0$$

$$\begin{array}{r} -8 \quad -8 \\ \hline \end{array}$$

$$x = -8$$

