Thursday, February 19, 2015

1. Put
$$y = x^2 - 6x + 10$$
 in vertex form

2. Put
$$2x^2 + 4x - 5 = y$$
 in vertex form

3. Put
$$3(x - 2)^2 + 4 = y$$
 in standard form

Hint: Use
$$h = \frac{-b}{2a}$$
 or your calculator
Page 7 in your study guide

Objectives Solve equations containing radical expressions

Recognize when extraneous solutions may arise when solving radical equations and check solutions to determine which solutions may be extraneous.

HomeworkPacket Page 15: 2, 3, 6, 8 and 9Packet Page 16: 11-21 odd

No Enrichment

1st block 9:15 - 10:17 2nd block 10:23 - 11:25'A' lunch 3rd block class 11:56 -1:00 'A' lunch 11:25 - 11:50'B' lunch 3rd block class 11:31 - 12:00; 12:31 - 1:0012:00 - 12:25 'B' lunch 'C' lunch 3rd block class 11:31 - 12:35'C' lunch 12:35 - 1:004th block 1:06 - 2:15

The progress report you have is for your eyes only. You will receive a new report next week that will need to be signed.

Look at what assignments are missing. You can still turn things in. Any grade is better than a ZERO.

CASTLE LEARNING ASSIGNMENTS

GET OUT YOUR PHONES!

go to <u>www.castlelearning.com</u>

Logon ID is cms-student id

For example if your user id is 48309203 your user id is cms-48309203.

You don't need a password the first time you log in. You'll be prompted to create one.

What is a Radical Equation?

An equation that has a variable in a radicand or a variable with a rational exponent.

$$3 + \sqrt{2x - 3} = 8$$

Three basic step...

$3 + \sqrt{2x} - $	-3 = 8
-3	-3
$\sqrt{2x-3} = 5$	
$(\sqrt{2x-3})^2 = 5^2$	
2x -	3 = 25
+	-3 +3
2	2x = 28
	2 <i>x</i> 28
-	$\frac{1}{2} = \frac{1}{2}$
	x = 14

1. Isolate the radical expression

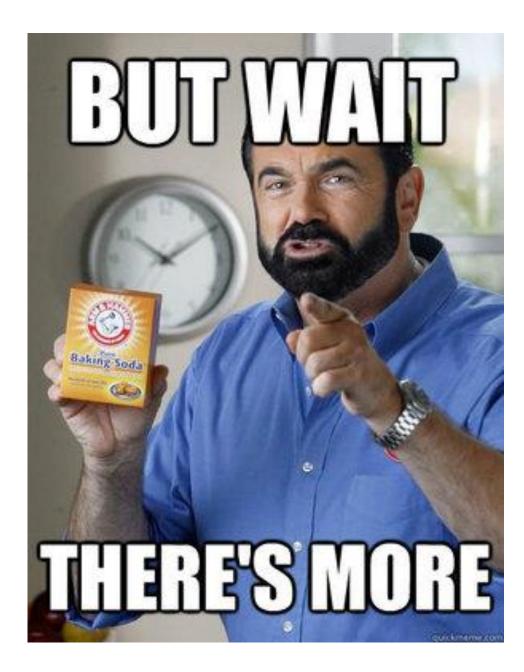
2. Square both sides

3. Solve for x

3.)

Do problems 3, and 9 on Packet Page 15





It can get a little complicated. Sometimes we cause extraneous solutions to appear when we solve radical equations.

So what do we mean by extraneous solutions...

ex·tra·ne·ous 📣 [ik-strey-nee-uh s] 👔 🛛 Show IPA

adjective

- 1. introduced or coming from without; not belonging or proper to a thing; external; foreign: *extraneous substances in our water*.
- 2. not pertinent; irrelevant: an extraneous remark; extraneous decoration.

Origin:

1630–40; < Latin *extrāneus* external, foreign, equivalent to *extr* (*a*)-<u>extra-</u> + *-ān* (*us*) <u>-an</u> + *-eus* <u>-eous</u>

What is the solution of $\sqrt{x+7} - 5 = x$? Check your results.

$$\sqrt{x+7} - 5 = x$$

Isolate the radical. Square each side. Simplify.

Combine like terms.

Factor.

Zero-Product Property

To check our answers we substitute them back into the <u>original</u> equation and see if they produce a true statement.

Check

$$\sqrt{x+7} - 5 = x \qquad \sqrt{x+7} - 5 = x$$

$$\sqrt{-3+7} - 5 \stackrel{?}{=} -3 \qquad \sqrt{-6+7} - 5 \stackrel{?}{=} -6$$

Do problems 11, and 15 on Packet Page 16

11.)

15.)



Whenever we square both sides of an equation to solve, we may be introducing **extraneous** solutions into the equation.

When checking your solutions, use the **Original** when substituting values.

What if you have more than one radical in the equation?

What is the solution of
$$\sqrt{2x + 1} - \sqrt{x} = 1$$
?
 $\sqrt{2x + 1} - \sqrt{x} = 1$

Isolate the more complicated radical. Square each side.

Isolate $2\sqrt{x}$.

Square each side.

Subtract 4x from each side.

Factor.

Zero-Product Property

Check your answers...

Check

$$\sqrt{2x + 1} - \sqrt{x} = 1$$

 $\sqrt{2(0) + 1} - \sqrt{0} \stackrel{?}{=} 1$

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$$\sqrt{2x+1} - \sqrt{x} = 1$$

 $\sqrt{2(4)+1} - \sqrt{4} \stackrel{?}{=} 1$

9

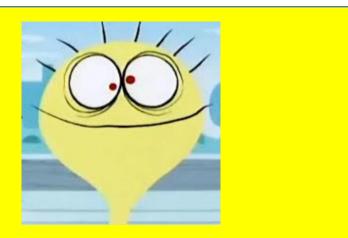
What if you have to solve an equation like the following?

$$(x+6i)(2+i) = 14 + 22i$$



Expand the left side. (FOIL) Simplify (use i²=-1) Group real and imaginary terms Set Corresponding Parts Equal Solve each part for x Now you try. Solve for x

$$(3+2i)(1-xi) = 9 - 7i$$



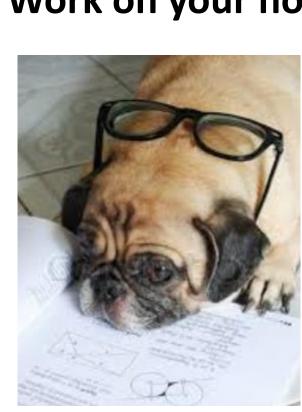
Expand the left side. (FOIL)

Simplify (use i²=-1)

Group real and imaginary terms

Set Corresponding Parts Equal

Solve each part for x



Work on your homework.