7.3 Binomial Radical Expressions

Warm Up - Simplify each expression

1) $\sqrt[3]{32x^{12}y^{14}}$

2) $\sqrt{3x}\cdot\sqrt{8x^5}$

3) $\dfrac{\sqrt[3]{48x^3y^{13}}}{\sqrt[3]{6xy^2}}$

Mar 19-7:45 AM

Radical Matching Partner Activity

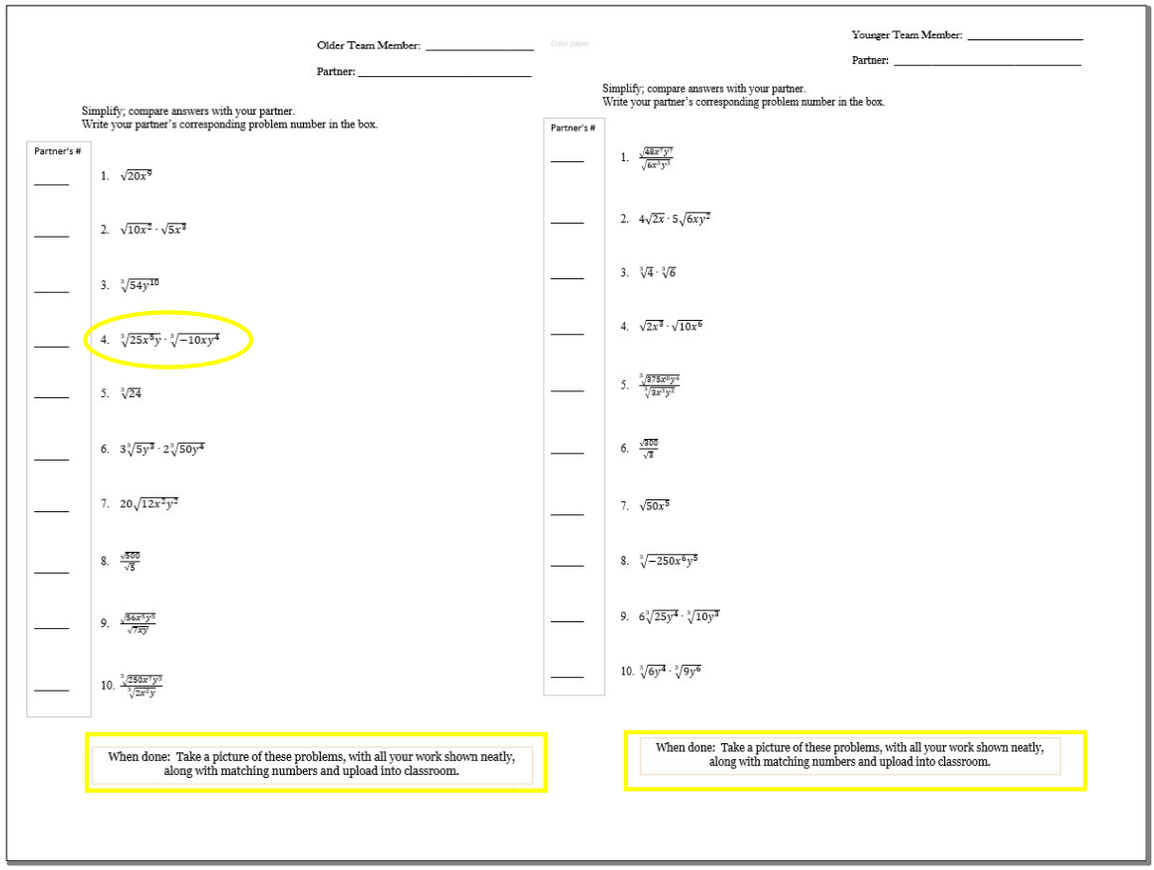
You will be put into groups of 2.

Get the worksheet. There are 2 pages: one for

the older person in the group, one for the younger. Do the problems from your designated page. Your answers will match your partner's answers, but will not be in the same order. Your goal is to find all the matching answers by showing all your work, and writing the corresponding problem number on your paper, therefore, you must talk with your partner while working.

Let's do one together on the next slide!

Oct 17-10:06 AM



Older Team Member: _____

Partner: _____

Simplify; compare answers with your partner.
Write your partner's corresponding problem number in the box.

Partner's #	
____	1. $\sqrt{20x^9}$
____	2. $\sqrt{10x^2} \cdot \sqrt{5x^3}$
____	3. $\sqrt[3]{54y^{10}}$
____	4. $\sqrt[3]{25x^3y} \cdot \sqrt[3]{-10xy^4}$
____	5. $\sqrt[3]{24}$
____	6. $3\sqrt[3]{5y^3} \cdot 2\sqrt[3]{50y^4}$
____	7. $20\sqrt{12x^2y^2}$
____	8. $\frac{\sqrt{500}}{\sqrt{5}}$
____	9. $\frac{\sqrt{56x^3y^3}}{\sqrt{7xy}}$
____	10. $\frac{\sqrt[3]{250x^3y^2}}{\sqrt[3]{2x^3y}}$

When done: Take a picture of these problems, with all your work shown neatly, along with matching numbers and upload into classroom.

Younger Team Member: _____

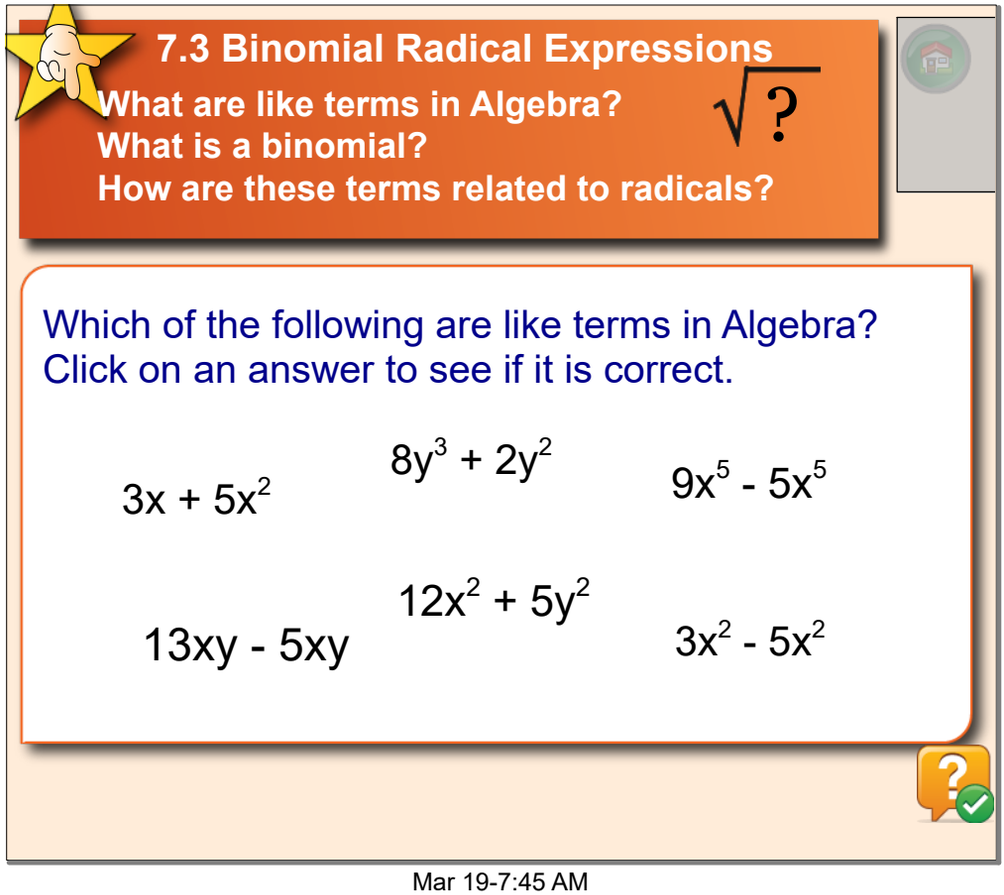
Partner: _____

Simplify; compare answers with your partner.
Write your partner's corresponding problem number in the box.

Partner's #	
____	1. $\frac{\sqrt{48x^7y^7}}{\sqrt{6x^3y^3}}$
____	2. $4\sqrt{2x} \cdot 5\sqrt{6xy^2}$
____	3. $\sqrt[3]{4} \cdot \sqrt[3]{6}$
____	4. $\sqrt{2x^3} \cdot \sqrt{10x^6}$
____	5. $\frac{\sqrt[3]{375x^{10}y^4}}{\sqrt[3]{3x^3y^3}}$
____	6. $\frac{\sqrt{200}}{\sqrt{2}}$
____	7. $\sqrt{50x^5}$
____	8. $\sqrt[3]{-250x^6y^5}$
____	9. $6\sqrt[3]{25y^4} \cdot \sqrt[3]{10y^3}$
____	10. $\sqrt[3]{6y^4} \cdot \sqrt[3]{9y^6}$

When done: Take a picture of these problems, with all your work shown neatly, along with matching numbers and upload into classroom.

Jan 10-3:08 PM



Mar 19-7:45 AM

Using your knowledge of like terms in Algebra, which do you think are like radicals?

$8\sqrt{3} - 3\sqrt{12}$

$3\sqrt{75} - 6\sqrt{27}$

$2\sqrt[3]{15} - 2\sqrt[3]{5}$

$2\sqrt{7} + 3\sqrt{7}$

$5\sqrt{5} + 3\sqrt{3}$

$5\sqrt{9} + 4\sqrt{9}$

Mar 19-7:45 AM

How do you FOIL $(x - 3)(x + 5)$?

You do the same thing with radicals!

1) $(2+4\sqrt{3})(1-5\sqrt{3})$

2) $(3+\sqrt{7})(3-\sqrt{7})$

What do you notice when you multiply conjugate pairs?

you end up with a constant

slide to reveal

Mar 19-7:45 AM

More Examples

3) $(\sqrt{5}+\sqrt{6})^2$ $= (\sqrt{5}+\sqrt{6})(\sqrt{5}+\sqrt{6})$

	$\sqrt{5}$	$\sqrt{6}$
$\sqrt{5}$	5	$\sqrt{30}$
$\sqrt{6}$	$\sqrt{30}$	6

$\Rightarrow 11 + 2\sqrt{30}$

$5 \cdot 6$
$5 \cdot 3 \cdot 2$

4) $(\sqrt{10}+8)^2$ $74 + 16\sqrt{10}$

Mar 19-7:45 AM

Multiplying by the Conjugate to Rationalize the Denominator

to get rid of the root

5) $\dfrac{5}{1-\sqrt{3}} \cdot \dfrac{1+\sqrt{3}}{1+\sqrt{3}} = \dfrac{5+5\sqrt{3}}{1+\sqrt{3}-\sqrt{3}-3}$

$\dfrac{5+5\sqrt{3}}{-2}$

6) $\dfrac{5+\sqrt{2}}{4+\sqrt{2}} \cdot \dfrac{4-\sqrt{2}}{4-\sqrt{2}}$

	4	$-\sqrt{2}$
5	20	$5\sqrt{2}$
$\sqrt{2}$	$4\sqrt{2}$	-2

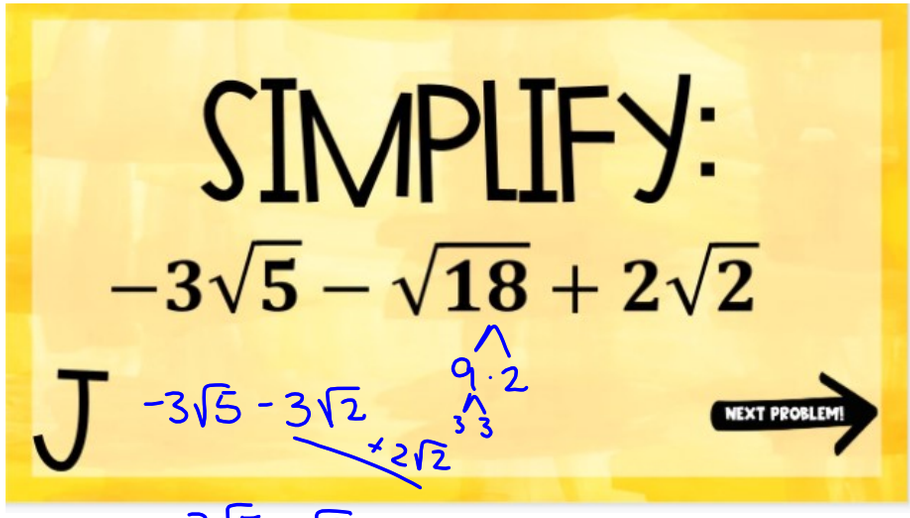
	4	$+\sqrt{2}$
4	16	$4\sqrt{2}$
$-\sqrt{2}$	$-4\sqrt{2}$	-2

$\dfrac{18-\sqrt{2}}{14}$

Mar 19-7:45 AM

Go to the classroom, to get the in-class scavenger hunt. Read the directions. Then, I'll go through the first couple of problems with you.

Jan 13-9:00 PM



Jan 20-8:50 AM

SIMPLIFY:

$-2\sqrt{6} + 12\sqrt{6} - \sqrt{6}$

B

NEXT PROBLEM!

Jan 20-8:52 AM

HOMEWORK 7.3

Make sure you finish the scavenger hunt, show all the work and turn in google form with letter answers by class time ~~tomorrow.~~ Thursday

Mar 19-7:45 AM