

$$\begin{array}{c} (16)\sqrt{5}-2\sqrt{5}+9\sqrt{5} \\ (1-2+9)\sqrt{5} \\ \hline (8)5 \\ \hline (18)3\sqrt{8}+2\sqrt{3}-10\sqrt{8} \\ \hline (4)2 \\ \hline (4$$

20
$$3\sqrt{6x} - 5\sqrt{6x}$$

17
$$6\sqrt{7} + \sqrt{14} - 5\sqrt{14} - 12\sqrt{7}$$

$$(6 - 12) \sqrt{7} + (1 - 5) \sqrt{14}$$

$$-6 \sqrt{7} - 4 \sqrt{14}$$

$$(9) \sqrt[3]{4} \sqrt{27} + 5\sqrt[3]{18} - 9\sqrt[3]{48} + 5\sqrt[3]{288}$$

$$9 \sqrt[4]{9} \sqrt[4]{9} \sqrt[4]{3} \sqrt[4]{9}$$

$$12\sqrt{3} - 36\sqrt{3} + 15\sqrt{2} + 60\sqrt{2}$$

$$75\sqrt{2} - 24\sqrt{3}$$

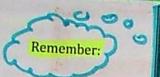
$$\begin{array}{c}
21) & 2\sqrt{25y} + 3\sqrt{28y} - \sqrt{324y} - 2\sqrt{63x} \\
40) & 40) & 40
\end{array}$$

$$\begin{array}{c}
10\sqrt{y} + 6\sqrt{7y} - 18\sqrt{y} - 6\sqrt{7x}
\end{array}$$

$$\begin{array}{c}
-8\sqrt{y} + 6\sqrt{7y} - 6\sqrt{7x}
\end{array}$$

Geometry: 9.1 - Simplifying Radicals Day 2

Dividing Radicals: $\frac{\sqrt{a}}{\sqrt{b}} = \sqrt{\frac{a}{b}}$ If dividing two radicals with same index, just divide the radicands!



For a radical expression to be completely simplified:

- 1. All perfect squares must be factored out of radicand
- 2. NO FRACTIONS left under a radical sign!
- 3. NO RADICALS left in the denominator of a fraction!

Warm-up: Simplify completely.

$$\begin{array}{c}
\boxed{0} \sqrt{2} \cdot \sqrt{2} \\
\left(\sqrt{2}\right)^2
\end{array}$$

$$\boxed{3.}\sqrt{15}\cdot\sqrt{15}$$

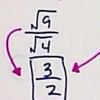
$$4 \sqrt{237} \cdot \sqrt{237}$$

 $9\frac{1}{\sqrt{2}}.\frac{1}{\sqrt{2}}$

Simplify completely - remember the rules about fractions!

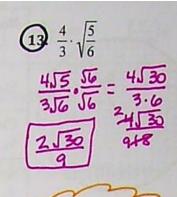
(5)
$$\frac{\sqrt{60}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$\frac{\sqrt{4}}{\sqrt{3}} = \frac{2}{\sqrt{3}} \frac{\sqrt{3}}{\sqrt{3}}$$



$$\bigcirc \frac{6}{5\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}}$$





Solving Equations: Solve for x.

All quadratic equations have WO solutions.

$$\begin{array}{c} (14) x^2 - 49 = 0 \\ x^2 = 49 \\ \hline \end{array}$$

 $8x^2 - 15x = 7x$

16
$$2x^2 - 5 = 4$$

 $\frac{2x^2}{2} = \frac{9}{2}$
 $\sqrt{x^2} = \frac{19}{2}$
 $x = \pm \frac{\sqrt{9}}{\sqrt{2}} = \pm \frac{\sqrt{9} \cdot 2}{2} = \pm \frac{3\sqrt{2}}{2}$
19 $2x^2 - 8x = 5x^2 + 12x$

 $0 = 3x^2 + 20x$

K=0 3x+20=0

3x= -20

x(3x+20) = 0

$$17 16x^{2}-13x=19x$$

$$16x^{2}-32x=0$$

$$16x(x-2)=0$$

$$16x=0 \quad x-2=0$$

$$x=0 \quad x=2$$

$$x=0 \quad x=2$$

$$x=2$$

$$x=0,23$$

$$x^{2}-5x=24$$

$$x^{2}-5x-24=0$$

$$(x-8)(x+3)=0$$

X= 3-3,8}

$$8x^{2}-22x=0$$
 $2x(x-11)=0$
 $2x=0$
 $x=0$
 $x=0$
 $x=0$
 $x=0$
 $x=11$
 $x=0$
 $x=0$
 $x=11$
 $x=0$
 $x=0$

this time?

X:	= {0, "影	X= -3
22) x ²	$+11x+\left(4\sqrt{3}\right)^2$	$=(3\sqrt{2})^2$
	+11x+(16.3	
	+11x+48	
	2+11x+3	
	(x+5)(x+6)	
	X= {-5	,-6}

Geometry Quadratics

NAME:

Solve by factoring:

①
$$m^2 - 5m = 14$$
 $m^2 - 5m - 14 = 0$ $m = \{-2, 7\}$

· O

②
$$x^2 = -4x - 3$$
 $\chi^2 + 4x + 3 = 0$ $\chi = \{-1, -3\}$

Use the Quadratic Formula to Solve:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Remember! First make sure the equation is written in the form: $Ax^2 + Bx + C = 0$

> Then find: A = ? B = ? C = ?

$$3 2x^2 - 21x - 36 = 0$$

$$A = 2 B = -21 C = -36$$

3
$$2x^{2} - 21x - 36 = 0$$
 $A = 2$
 $B = -21$
 $C = -36$
 $X = -(-21) \pm \sqrt{(-21)^{2} - 4(2)(-36)}$
 $X = 21 + 27 = 48 + 12$
 $X = 21 - 27 = -9 = -\frac{3}{2}$
 $X = 21 - 27 = -9 = 27$
 $X = 21 - 27 = -9 = 27$

$$4 2w^2 - 11w = -12$$

$$h = \frac{-17 - 13}{6} = \frac{-30}{6} = \frac{-5}{5}$$

4)
$$2w^2 - 11w = -12$$

 $2w^2 - 11w + 12 = 0$
 $A = 2$ $B : -11$ $C = 12$ $W = -(-11) \pm \sqrt{(-11)^2 - 4(2)(12)}$
 $2(2)$

$$W = \frac{11+5}{4} = \frac{14}{4} = \frac{1$$

$$\sqrt{121-96}$$
 $\sqrt{25} = 5$

$$h = \frac{-(17) \pm \sqrt{(17)^2 - 4(3)(10)}}{2(3)}$$

