What questions do you have on your "Solving Quadratics by Taking Square Roots" worksheet?

⑤

⑫ $9m^2 - 5 = 751$

$ +5 \quad\quad +5$

$\dfrac{9m^2}{9} = \dfrac{756}{9}$

$\sqrt{m^2} = \sqrt{84}$

$m = \pm\sqrt{84} = \pm\sqrt{\cancel{4}^{2} \cdot \sqrt{21}}$

$\boxed{m = \pm 2\sqrt{21}}$

P
E
M
D
A
S

⑤ $\dfrac{7n^2}{7} = \dfrac{-343}{7}$

$\sqrt{n^2} = \sqrt{-49} = \pm i\sqrt{\cancel{49}^{7}} = \pm 7i$

$\boxed{n = \pm 7i}$

Here is the quadratic formula. Solving quadratics using this formula works for ANY quadratic! Make sure your quadratic is equal to 0 before you begin.

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

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From your worksheet.

Solve each equation with the quadratic formula.

$a = 9$
$b = -1$
$c = -16$

1) $9n^2 - 1n - 16 = 0$

$$x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4 \cdot 9 \cdot -16}}{2 \cdot 9} = \boxed{\frac{1 \pm \sqrt{577}}{18}}$$

$$\left\{ \frac{1 + \sqrt{577}}{18}, \frac{1 - \sqrt{577}}{18} \right\}$$

Solve each equation with the quadratic formula.

11) $-4n^2 - 5 = 8n$

$$\frac{-8n \quad -8n}{-4n^2 - 8n - 5 = 0}$$

$a = -4$
$b = -8$
$c = -5$

$$x = \frac{-(-8) \pm \sqrt{(-8)^2 - 4 \cdot -4 \cdot -5}}{2 \cdot -4}$$

$$= \frac{8 \pm \sqrt{-16}}{-8} = \frac{8 \pm i\sqrt{16}^{4}}{-8} =$$

$$\frac{\overset{2}{8} \pm \overset{1}{4}i}{\underset{-2}{-8}} = \boxed{\frac{2 \pm i}{-2}}$$

OR

$$\left\{ \frac{2 + i}{-2}, \frac{2 - i}{-2} \right\}$$

$$\frac{4 \cdot \sqrt{10}}{}$$

$$\frac{10 \pm 2\sqrt{10}}{10}$$

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Homework

Solving Quadratics with the Quadratic Formula WKS