

# Square and cube Root Equations HW

1) Solve.  $\left(\frac{1}{4}\right)^3 = \frac{1}{4} \cdot \frac{1}{4} \cdot \frac{1}{4} = \boxed{\frac{1}{64}}$

2)  $\sqrt{36} = \pm 6$ , because  $\begin{matrix} -6 \cdot -6 = 36 \\ 6 \cdot 6 = 36 \end{matrix}$

3)  $\sqrt{121} = \pm 11$ , because  $\begin{matrix} -11 \cdot -11 = 121 \\ 11 \cdot 11 = 121 \end{matrix}$

4)  $\sqrt[3]{8} = 2$ , because  $2 \cdot 2 \cdot 2 = 8$

5)  $\sqrt[3]{-64} = -4$ , because  $(-4)(-4)(-4) = -64$

6)  $(-3)^3 = (-3)(-3)(-3) = -27$

7)  $\left(\frac{1}{7}\right)^2 = \frac{1}{7} \cdot \frac{1}{7} = \boxed{\frac{1}{49}}$

8)  $\sqrt[3]{\frac{1}{8}} = \frac{\sqrt[3]{1}}{\sqrt[3]{8}} = \boxed{\frac{1}{2}}$

9)  $\sqrt{\frac{49}{100}} = \frac{\sqrt{49}}{\sqrt{100}} = \pm \frac{7}{10}$

10) Solve.  $X^2 = 144$   $\sqrt{X^2} = \sqrt{144}$   
 $X = \pm 12$

11)  $X^3 = 27$   $\sqrt[3]{X} = \sqrt[3]{27}$   
 $X = 3$

12)  $X^2 = 225$   $\sqrt{X^2} = \sqrt{225}$   
 $X = \pm 15$

13) What is the side length of a square with an area of  $169 \text{ ft}^2$ ?

$A = 169 \text{ ft}^2$

$A = S^2$   
 $\sqrt{169} = \sqrt{S^2}$   
 $\pm 13 = S$

$13$  is the side length

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