

September 8, 2015
 * Quiz #3 - Tomorrow
 8.1 → #1-#75-#83
 * Read & Do Examples
 in 8.2

Sep 8-9:54 AM

Perfect Roots
 Square Roots → \sqrt{a}
 $\sqrt{0} = 0^{1/2} = 0$; $0^2 = 0 \cdot 0 = 0$ *because*
 $\sqrt{1} = 1^{1/2} = 1$; $1^2 = 1 \cdot 1 = 1$
 $\sqrt{2} = 2^{1/2} = ?$
 $\sqrt{3} = 3^{1/2} = ?$ } Irrational
 $\sqrt{4} = 4^{1/2} = 2$; $2^2 = 2 \cdot 2 = 4$
 $\sqrt{5} =$
 $\sqrt{6} =$
 $\sqrt{7} =$
 $\sqrt{8} =$ } Irrational
 $\sqrt{9} = 9^{1/2} = 3$; $3^2 = 3 \cdot 3 = 9$

Sep 8-10:07 AM

Perfect Square Roots Using Variables
 $\sqrt{x^2} = \sqrt{x \cdot x} = x$
How groups of two x's do we have? one group
 $\sqrt{x^4} = \sqrt{x \cdot x \cdot x \cdot x} = x^2$
 $\sqrt{x^6} = x^3$
 $\sqrt{x^8} = x^4$
 $\sqrt{x^{10}} = x^5$

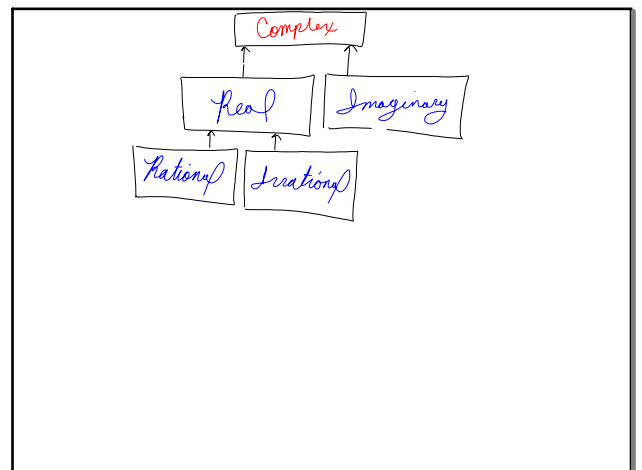
Sep 8-10:19 AM

$\sqrt{x^4} = \sqrt{(x^2)^2}$ *same!*
 $= x^2$
 $\sqrt{x^3} = \sqrt{x \cdot x \cdot x} = x \sqrt{x}$
 $= \sqrt{(x^2)^2 \cdot x} = x \sqrt{x}$
 $\sqrt{x^{193}} = \sqrt{(x^{96})^2 \cdot x}$
 $\frac{193}{2} = 96$
 $96 \cdot 2 = 192$

Sep 8-10:23 AM

$\sqrt{25} = \sqrt{(5)^2} = 5$
 $-\sqrt{25} = -5$
 $\sqrt{-25} = \sqrt{(?)^2} =$ *Not a Real Number!*
negative Rational
if $(-5)^2 = (-5) \cdot (-5) = 25$

Sep 8-10:32 AM



Sep 8-10:37 AM

$$\sqrt{x^2} = |x| = x$$

$$\overset{\text{odd}}{\circlearrowleft} \sqrt[3]{-27} = (-3)^3 = -27$$

$$= (-3)^3 = (-3) \cdot (-3) \cdot (-3)$$

$$= 9 \cdot (-3)$$

$$= \textcircled{-27} \text{ Real Number!}$$

Sep 8-10:39 AM

$$\sqrt[3]{x^3 y^4} = \sqrt[3]{(x^3) \cdot (y^4)^3}$$

$$= x y^4$$

Sep 8-10:44 AM