

Welcome

-All cell phones in holder

-Start warm-up on assigned board

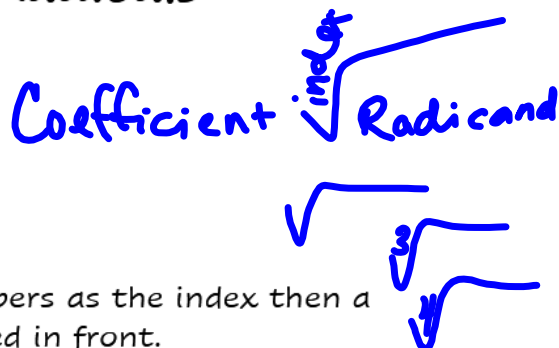
$$x^2 + 4x - 60$$

$$x^2 + 4x - 96$$

Simplifying Radicals

How to simply:

1. Identify the index.
2. Break down the radicand to factors.
3. Group like factors.
4. If group has the same number of members as the index then a representative for the group will be placed in front.
5. Any factors that do not have a group remain inside the radical.



Examples

<p>1. $\sqrt{180}$</p> <p>$2 \cdot 2 \cdot 3 \cdot 3 \cdot 5$</p> <p>$6\sqrt{5}$</p>	<p>2. $7\sqrt{20}$</p> <p>$2 \cdot 2 \cdot 5$</p> <p>$14\sqrt{5}$</p>	<p>3. $3\sqrt{25x^3}$</p> <p>$5 \cdot 5 \cdot x \cdot x \cdot x$</p> <p>$15x\sqrt{x}$</p>	<p>4. $\sqrt[3]{250x^6y^4}$</p> <p>$2 \cdot 125 \cdot x^6 \cdot y^4$</p> <p>$5 \cdot 5 \cdot 5 \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y \cdot y$</p> <p>$5x^2y\sqrt[3]{2y}$</p>
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Now let's Practice! You have 20
minutes

What are complex Number?

$$\sqrt{-4} = 2i$$

$$\sqrt{-9} = 3i$$

$$\sqrt{-12} = 2i\sqrt{3}$$

IMAGINARY NUMBERS

$$i^1 = \sqrt{-1} \quad i^2 = -1 \quad i^3 = -i \quad i^4 = 1$$

EVALUTING i

$$i \cdot i = \sqrt{-1} \cdot \sqrt{-1} = \sqrt{-1 \cdot -1} = \sqrt{1} = 1$$

$$i^3 = i \cdot i^2 = i \cdot -1 = -i$$

$$i^4 = i^2 \cdot i^2 = -1 \cdot -1 = 1$$

1. Divide the exponent by 4
2. Use the remainder of the quotient to decide i's value

EXAMPLES SIMPLIFY:

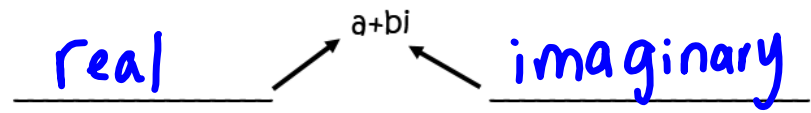
$\frac{1}{.25} = i$	$\frac{2}{.5} = -1$	$\frac{3}{.75} = -i$	$\frac{0}{1} = 1$
			whole #

1.) i^{38} $\frac{38}{4} = 9.5$ -1	2.) i^{45} $\frac{45}{4} = 11.25$ i	3.) i^{400} $\frac{400}{4} = 100$ 1	4.) i^{23} $\frac{23}{4} = 5.75$ $-i$

MORE SIMPLIFYING EXAMPLES:

5.) $2i^2 \cdot 3i^3$ $2i^2 \cdot 3i^3$ $6i^5$ $6i$	6.) $i^8 \cdot i^9 \cdot i^{10}$ i^{27} $\frac{27}{4} = 6.75$ $-i$	7.) $i^8 + i^9 + i^{10}$ $i^8 = 1$ $i^9 = i$ $i^{10} = -1$ $1 + i + -1$ i

Complex Numbers



- 5 real
- 3i imaginary
- 5+3i Complex

