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Intro to 11-6 - Simplifying Radicals.....#

EQ: What are **perfect squares** and how are they used to **simplify radical expressions**?

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Difference between radical ( $\sqrt{\quad}$ ) **functions** (11-5) & **expressions**

Radical Functions	Radical Expressions
$f(x) = \sqrt{x}$ * Can be evaluated for an input * A variable (x) is under the radical sign	* Any expression with a square root sign * An expression doesn't have = <b>Examples</b> $\sqrt{25}$ $\sqrt{2m}$ $\sqrt{\frac{7}{3}}$ $\sqrt{4x^2y}$

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**Perfect Squares** are examples of radical expressions

- Numbers who have rational (whole) numbers as their square roots

What are perfect squares?

List the perfect squares up to  $15^2$

$\sqrt{0}$     $\sqrt{4}$

$\sqrt{1}$

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**Perfect Squares** are used to **Simplify Radical Expressions**

Fill in the blanks:

1. $\sqrt{50}$ $\sqrt{25 \cdot 2}$ $5\sqrt{2}$	2. $\sqrt{90}$ $\sqrt{9 \cdot 10}$ $3\sqrt{10}$	3. $2\sqrt{300}$ $2\sqrt{100 \cdot 3}$ $2 \cdot 10\sqrt{3}$ $20\sqrt{3}$
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$\sqrt{25 \cdot 2}$   
 $(5 \cdot 5)$   
 $5\sqrt{2}$

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On your own! Simplify the radicals using perfect squares

4. $\sqrt{12}$ $\sqrt{4 \cdot 3}$ $2\sqrt{3}$	5. $3\sqrt{63}$ $3\sqrt{9 \cdot 7}$ $3 \cdot 3\sqrt{7}$ $9\sqrt{7}$	6. $\sqrt{196}$  14
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$\sqrt{48}$   
 $\sqrt{16 \cdot 3}$   
 $4 \cdot 2\sqrt{3}$   
 $8\sqrt{3}$   
 $8\sqrt{4 \cdot 3}$   
 $8 \cdot 2\sqrt{3}$   
 $16\sqrt{3}$

$\sqrt{36 \cdot 5}$   
 $6\sqrt{5}$

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Extras


9.  $-4\sqrt{72}$   
 $-4\sqrt{36 \cdot 2}$   
 $-4 \cdot 6\sqrt{2}$   
 $-24\sqrt{2}$

$\sqrt{375}$   
 $\sqrt{25 \cdot 15}$   
 $5\sqrt{15}$

$-4\sqrt{18}$   
 $-4 \cdot 3\sqrt{2}$   
 $-12\sqrt{2}$   
 $-12 \cdot 2 \cdot \sqrt{2}$

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**Assignment:**  
**Simplifying Radicals**  
**Worksheet**



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