Simplifying Radicals

<table>
<tr><th>Perfect Square</th><th>Number is NOT a Perfect Square</th></tr>
<tr><td>List of Perfect Squares:

If the problem contains a perfect square:
• Find the square root
• The square root would be an integer

Examples:
1) $\sqrt{25}$

2) $-\sqrt{144}$</td><td>If the problem contains a number that is not a perfect square:
• Use the product of two square roots
• One of these roots should be a perfect square
• Find the square root of the perfect square, leave the other root as is.

Examples:
1) $\sqrt{12} = \sqrt{\quad} \cdot \sqrt{\quad}$

2) $\sqrt{32} = \sqrt{\quad} \cdot \sqrt{\quad}$</td></tr>
<tr><th>Exponent is even</th><th>Exponent is odd</th></tr>
<tr><td>If the problem contains an even exponent:
• Divide the exponent by 2

Examples:
1) $\sqrt{x^4}$

2) $\sqrt{x^4y^2z^6}$</td><td>If the problem contains an odd exponent:
• Break the problem up into 2 powers
• One should have the highest even exponent
• The other exponent should be 1
• The sum of both exponents should be the original exponent

Examples:
1) $\sqrt{x^5} = \sqrt{\quad} \cdot \sqrt{\quad}$

2) $\sqrt{y^{11}} = \sqrt{\quad} \cdot \sqrt{\quad}$</td></tr>
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