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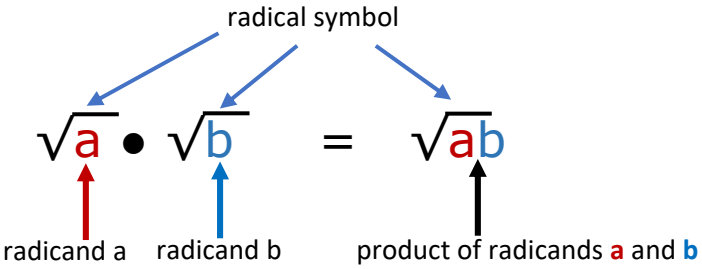
Multiplying Radical Expressions Guided Lesson Explanation

1. $\sqrt{6} \bullet \sqrt{6}$

This is an example where we can simplify by combining the radicands as we learn in the lesson.



$\sqrt{6} \bullet \sqrt{6} = \sqrt{6 \bullet 6} = \sqrt{36} = \sqrt{6^2} = 6$

2. $\sqrt{3} \bullet \sqrt{12}$

This question follows the same technique. It is not that obvious until you get into the arithmetic of it all. We will now apply this to the problem.

$\sqrt{3} \bullet \sqrt{12} = \sqrt{3 \bullet 12} = \sqrt{36} = \sqrt{6^2} = 6$

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3. $\sqrt{2}\ (\sqrt{2}\ - 3)$

At first the parathesis may confuse you, but if you relax what the non-condensed form of this expression is, you will see that it also follows this method because it is a product of what is outside the parathesis with everything that is inside it. We will process this now:

$$\sqrt{2}\ (\sqrt{2}\ - 3)\ = \sqrt{2} \bullet \sqrt{2}\ - \sqrt{2} \bullet 3$$

We can follow the same method we have been using, but we must realize that this only applies to radicals. When we are multiplying a number inside a radical with one that is outside, we place them side by side.

$\sqrt{2} \bullet \sqrt{2}\ - \sqrt{2} \bullet 3$

$= \sqrt{4} - 3\sqrt{2}$ We can simplify by taking the square of 4. $\sqrt{4} = 2$

$= 2 - 3\sqrt{2}$ We cannot reduce any further.