<u>Multiplying Radicals:</u>

Step 1: Factor radicands.

Step 2: Multiply coefficients and combine factors of radicands under one radical (assuming index is same).

Step 3: Simplify radical.
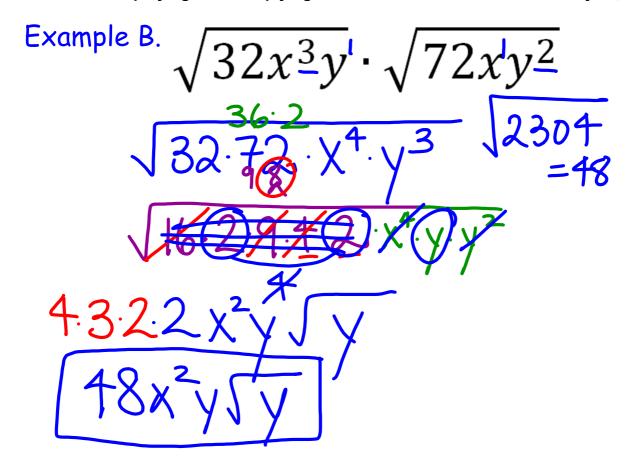
Example A. $\sqrt{18} \cdot \sqrt{24}$ $\sqrt{432}$

$\sqrt{18 \cdot 24}$ $\sqrt{144 \cdot 3}$

$\sqrt{9 \cdot 2 \cdot 4 \cdot 6}$

$3 \cdot 2 \cdot 2$ $\overset{12}{4}\cdot\underset{}{③}$ $= 12\sqrt{3}$

Example B.

$$\sqrt{32x^3y^1} \cdot \sqrt{72x^1y^2}$$

$$\sqrt{32 \cdot 72 \cdot x^4 \cdot y^3}$$

$$36 \cdot 2$$

$$\sqrt{2304} = 48$$

$$\sqrt{16 \cdot 2 \cdot 4 \cdot 2 \cdot x^4 \cdot y \cdot y^2}$$

$$4 \cdot 3 \cdot 2 \cdot 2\, x^2 y \sqrt{y}$$

$$\boxed{48x^2y\sqrt{y}}$$

Example C.

$$2x\sqrt{15x^2} \cdot 3\sqrt{20x^3}$$

$$6x\sqrt{15 \cdot 20 \cdot x^5}$$

$$2 \cdot 6x^1 \sqrt{5 \cdot 3 \cdot 4 \cdot 5 \cdot x \cdot x^4}$$
$$\cdot 5x^2$$

$$60x^3\sqrt{3x}$$