

Bell work

(1) $\sqrt[5]{-32x^5y^{30}z^{45}}$

$-2xy^6z^9$

$\sqrt{x^6} \sqrt{x} \sqrt{x^4}$
 $x^3 y^2 \sqrt{x}$

(2) $\sqrt{x^7y^4}$

$\sqrt[3]{x^2} \sqrt[3]{y^{12}}$
 $\sqrt[3]{y^2}$
 $y^4 \sqrt[3]{x^2y^2}$

(3) $\sqrt[3]{x^2y^{14}}$

(4) $\sqrt[4]{x^9y^{15}}$
 $\sqrt[4]{x^8} \sqrt[4]{x}$
 $\sqrt[4]{y^{12}} \sqrt[4]{y^3}$
 $x^2 y^3 \sqrt[4]{xy^3}$

Multiplying Radical Expressions

$$\begin{aligned}
 \text{Ex 1)} \quad 3\sqrt{12} \cdot \sqrt{16} &= 3\sqrt{192} \\
 3\sqrt{4}\sqrt{3} \cdot 4 &\quad \downarrow \\
 3(2)\sqrt{3} \cdot 4 &\quad 3\sqrt{64}\sqrt{3} \\
 6\sqrt{3} \cdot 4 &\quad 3(8)\sqrt{3} = 24\sqrt{3} \\
 24\sqrt{3} &
 \end{aligned}$$

$$\begin{aligned}
 \text{Ex 2)} \quad \sqrt{6} \cdot \sqrt{6} \\
 \sqrt{36} \\
 6
 \end{aligned}$$

$$3) -4\sqrt{5} \cdot -\sqrt{3}$$

$$4\sqrt{45}$$

$$4\sqrt{9} \sqrt{5}$$

$$4(3)\sqrt{5} = 12\sqrt{5}$$

$$4) -3\sqrt{3}(2 + \sqrt{6})$$

$$-6\sqrt{3} - 3\sqrt{18}$$

$$-6\sqrt{3} - 3\sqrt{9}\sqrt{2} \rightarrow -3(3)\sqrt{2}$$

$$-6\sqrt{3} - 9\sqrt{2} \checkmark$$

$$\begin{aligned}
 & 5) \quad \overbrace{-2\sqrt{15}(-3\sqrt{3}+3\sqrt{5})} \\
 & \quad 6\sqrt{45} \quad - \quad 6\sqrt{75} \\
 & \quad 6\sqrt{9\sqrt{5}} \quad - \quad 6\sqrt{25\sqrt{3}} \\
 & \quad 18\sqrt{5} \quad - \quad 30\sqrt{3}
 \end{aligned}$$

$$\begin{aligned}
 & 6\sqrt{9\sqrt{5}} \\
 & 6(3)\sqrt{5}
 \end{aligned}$$

$$\begin{aligned}
 & 6) \quad \overbrace{(-2\sqrt{3}-3\sqrt{5})(5-\sqrt{5})} \\
 & \quad -10\sqrt{3} + 2\sqrt{15} - 15\sqrt{5} + 3(5) \\
 & \quad -10\sqrt{3} + 2\sqrt{15} - 15\sqrt{5} + 15
 \end{aligned}$$

$$7) (5\sqrt{2x} + \sqrt{5})(-4\sqrt{2x} + \sqrt{5})$$

$$\begin{aligned} & -20(2x) + 5\sqrt{10x} - 4\sqrt{10x} + 5 \\ & -40x + \sqrt{10x} + 5 \end{aligned}$$