

Product Rule

$$x^2 x^3 = x^{2+3} = x^5$$

$$(xy)^{\frac{1}{3}} = x^{\frac{1}{3}} y^{\frac{1}{3}}$$

$$\sqrt[3]{x} \sqrt[3]{y} = \sqrt[3]{xy} =$$

$$\sqrt[3]{\frac{a}{b}} = \frac{\sqrt[3]{a}}{\sqrt[3]{b}}$$

$$\boxed{\text{Ex 5}} \quad \textcircled{a} \quad \frac{\sqrt{6}}{\sqrt{6}} \cdot \sqrt{54} = \sqrt{324} = \boxed{18}$$

$$\begin{array}{c} \wedge \\ 9 \cdot 6 \\ \wedge \\ 3 \cdot 3 \end{array}$$

$$3 \sqrt{6}$$

$$= (\sqrt{6}) (3 \sqrt{6})$$

$$= 6 \cdot 3 = \boxed{18}$$

$$\Rightarrow \sqrt{6} \sqrt{6} = \sqrt{36} = 6$$

$$6^{\frac{1}{2}} 6^{\frac{1}{2}} = 6^1 = 6$$

R7

Day 2

$$\textcircled{b} \quad \sqrt[3]{m^1} \sqrt[3]{m^2} = \sqrt[3]{m^3} = m$$

$$m^{\frac{1}{3}} m^{\frac{2}{3}} = m^{\frac{1}{3} + \frac{2}{3}} = m^1 = m$$

$$\textcircled{c} \quad \sqrt{\frac{7}{64}} = \frac{\sqrt{7}}{\sqrt{64}} = \boxed{\frac{\sqrt{7}}{8}}$$

$$\textcircled{d} \quad \sqrt[4]{\frac{a}{b^4}} = \frac{\sqrt[4]{a}}{\sqrt[4]{b^4}} = \boxed{\frac{\sqrt[4]{a}}{b}}$$

$$\text{Ex 6} \quad \textcircled{a} \quad \sqrt{175} = \boxed{5\sqrt{7}}$$

$$\begin{array}{c} \wedge \\ 5 \quad 35 \\ \wedge \\ 5 \quad 7 \end{array}$$

$$\textcircled{b} \quad -3 \sqrt[5]{32} = -3(2) = \boxed{-6}$$

$$\text{Ex 7} \quad \textcircled{a} \quad 3 \sqrt[4]{11} - 7 \sqrt[4]{11}$$

$$\boxed{-4 \sqrt[4]{11}}$$

$$3x - 7x = -4x$$

$$\textcircled{b} \quad 2\sqrt{3} + 4\sqrt{12} = 2\sqrt{3} + 2(4)\sqrt{3}$$

$$= 2\sqrt{3} + 8\sqrt{3}$$

$$= \boxed{10\sqrt{3}}$$

$$\begin{aligned} \textcircled{c} \quad \sqrt{50} - \sqrt{18} \\ \begin{array}{cc} \wedge & \wedge \\ \boxed{2} \ 25 & \boxed{2} \ 9 \\ \uparrow & \uparrow \\ \textcircled{55} & \textcircled{33} \end{array} \\ 5\sqrt{2} - 3\sqrt{2} \\ \boxed{2\sqrt{2}} \end{aligned}$$

$$\boxed{\text{Ex 8}} \quad \textcircled{a} \quad 6\sqrt{3^2} = 3^{\frac{2}{6}} = 3^{\frac{1}{3}} = \boxed{{}^3\sqrt{3}}$$

$$\begin{aligned} \textcircled{b} \quad 6\sqrt{x^{12}y^3} &= x^{\frac{12}{6}} y^{\frac{3}{6}} = \boxed{x^2 y^{\frac{1}{2}}} \\ &= \boxed{x^2 \sqrt{y}} \end{aligned}$$