

6. Multiply: $\sqrt{15x^3} \cdot \sqrt{15x^5}$

$15x \cdot x \cdot x \cdot x$ $\sqrt{15 \cdot 15 \cdot \cancel{x^3} \cdot \cancel{x^5}}$ $= \sqrt{225x^8}$

$\cancel{x} \cdot \cancel{x} \cdot \cancel{x} \cdot \cancel{x}$

$= 15x^4$

7. Subtract: $\sqrt{48} - \sqrt{243}$

$\begin{array}{r} 48 \\ \wedge \\ 6 \cdot 8 \\ \wedge \quad \wedge \\ 2 \cdot 3 \quad 2 \cdot 4 \\ \quad \quad \wedge \\ \quad \quad 2 \cdot 2 \end{array}$

$\begin{array}{r} 243 \\ \wedge \\ 3 \cdot 81 \\ \quad \wedge \\ \quad 9 \cdot 9 \\ \quad \quad \wedge \quad \wedge \\ \quad \quad 3 \cdot 3 \quad 3 \cdot 3 \end{array}$

$2 \cdot 2 \sqrt{\cancel{2} \cdot \cancel{2} \cdot 2 \cdot 3} - 3 \cdot 3 \sqrt{\cancel{3} \cdot \cancel{3} \cdot \cancel{3} \cdot \cancel{3} \cdot 3}$

$4\sqrt{3} - 9\sqrt{3}$

$-5\sqrt{3}$

$$8. \text{ Solve: } \frac{\sqrt{8x-7} - 7}{+7} = 0$$

$$(\sqrt{8x-7})^2 = (7)^2$$

$$\frac{8x-7}{+7} = 49$$

$$\frac{8x}{8} = \frac{56}{8} \quad x = 7$$

$$9. \text{ Factor: } x^3 - 8$$

$$F^3 - L^3 = (F - L)(F^2 + FL + L^2)$$

$$x^3 - 8 = (x - 2)(x^2 + 2x + 4)$$

$$\begin{array}{cc} \downarrow & \downarrow \\ 3 & 3 \end{array}$$

$$\begin{array}{cc} (x) & (2) \\ F & L \end{array}$$