

Rationalize each denominator. Simplify if possible.

1. $\frac{8}{\sqrt{50}}$

2. $\frac{13}{\sqrt[3]{8}}$

3. $\frac{24}{\sqrt[3]{9}}$

4. $\frac{4 - \sqrt{2}}{\sqrt{6}}$

5. $\frac{6g}{\sqrt{3e^3g^6}}$

6. $\frac{15c^2}{\sqrt{18c^5d^{13}}}$

7. $\frac{42j^7k^8}{\sqrt[3]{49j^{31}k^4}}$

8. $\frac{12mn^4}{\sqrt[3]{125m^3n^{16}}}$

Rationalize each denominator. Simplify if possible.

ANSWERS

$$1. \frac{8}{\sqrt{50}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$$

$$= \frac{8\sqrt{2}}{\sqrt{100}}$$

$$= \frac{8\sqrt{2}}{10} = \boxed{\frac{4\sqrt{2}}{5}}$$

$$2. \frac{13}{\sqrt[5]{8}} = \frac{13}{\sqrt[5]{2^3}} \cdot \frac{\sqrt[5]{2^2}}{\sqrt[5]{2^2}}$$

$$= \frac{13 \sqrt[5]{2^2}}{\sqrt[5]{2^5}} = \boxed{\frac{13 \sqrt[5]{2^2}}{2}}$$

$$3. \frac{24}{\sqrt[3]{9}} = \frac{24}{\sqrt[3]{3^2}} \cdot \frac{\sqrt[3]{3}}{\sqrt[3]{3}}$$

$$= \frac{24 \sqrt[3]{3}}{\sqrt[3]{3^3}} = \frac{24 \sqrt[3]{3}}{3}$$

$$= \boxed{8 \sqrt[3]{3}}$$

$$4. \frac{4-\sqrt{2}}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{4\sqrt{6} - \sqrt{12}}{6} \rightarrow 4 \cdot 3$$

$$= \frac{4\sqrt{6} - 2\sqrt{3}}{6}$$

$$= \boxed{\frac{2\sqrt{6} - \sqrt{3}}{3}}$$

$$5. \frac{6g}{\sqrt{3e^3g^6}} \cdot \frac{\sqrt{3e}}{\sqrt{3e}}$$

$$= \frac{6g \sqrt{3e}}{\sqrt{3^2e^4g^6}} = \frac{6g \sqrt{3e}}{3e^2g^3}$$

$$= \boxed{\frac{2 \sqrt{3e}}{e^2g^2}}$$

$$6. \frac{15c^2}{\sqrt{18c^5d^{13}}} \cdot \frac{\sqrt{2cd}}{\sqrt{2cd}} = \frac{15c^2 \sqrt{2cd}}{\sqrt{36c^6d^{14}}}$$

$$= \frac{15c^2 \sqrt{2cd}}{6c^3d^7}$$

$$= \boxed{\frac{5 \sqrt{2cd}}{2cd^7}}$$

$$7. \frac{42j^7k^8}{\sqrt[3]{49j^{31}k^4}} \cdot \frac{\sqrt[3]{7j^2k^2}}{\sqrt[3]{7j^2k^2}}$$

$$= \frac{42j^7k^8 \sqrt[3]{7j^2k^2}}{\sqrt[3]{7^3j^{33}k^6}}$$

$$= \frac{42j^7k^8 \sqrt[3]{7j^2k^2}}{7j^{11}k^2}$$

$$= \boxed{\frac{6k^6 \sqrt[3]{7j^2k^2}}{j^4}}$$

$$8. \frac{12mn^4}{\sqrt[5]{125m^3n^{16}}} \cdot \frac{\sqrt[5]{5^2m^2n^4}}{\sqrt[5]{5^2m^2n^4}}$$

$$= \frac{12mn^4 \sqrt[5]{5^2m^2n^4}}{\sqrt[5]{5^5m^5n^{20}}} = \frac{12mn^4 \sqrt[5]{5^2m^2n^4}}{5m^1n^4}$$

$$= \boxed{\frac{12 \sqrt[5]{5^2m^2n^4}}{5}}$$