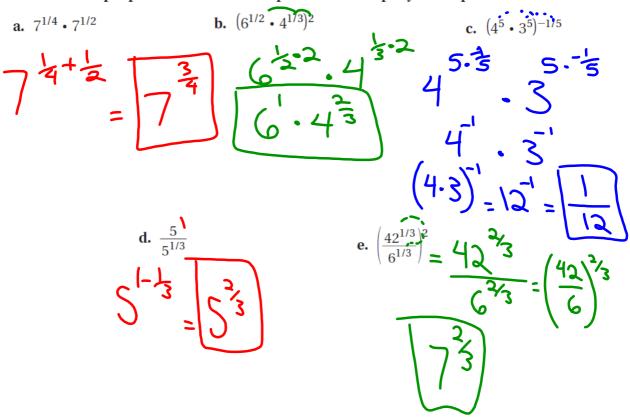
6.2 Apply Properties of Rational Exponents

Exponent Properties

EXAMPLE 1 Use properties of exponents

Use the properties of rational exponents to simplify the expression.



Properties of Radicals

$$\sqrt[n]{a \cdot b} = \sqrt[n]{a}$$

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

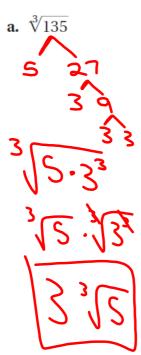
EXAMPLE 2 Use properties of radicals

a.
$$\sqrt[3]{12} \cdot \sqrt[3]{18}$$

b.
$$\frac{\sqrt[4]{80}}{\sqrt[4]{5}}$$

EXAMPLE 3 Write radicals in simplest form

Write the expression in simplest form.



inplest form.

b.
$$\frac{\sqrt[3]{7}}{\sqrt[5]{8}} = \frac{7}{8}$$

$$= \frac{7}{8}$$

$$=$$

PROPERTIES OF RATIONAL EXPONENTS Simplify the expression.

$$\boxed{\mathbf{5.}}3^{1/4} \cdot 27^{1/4}$$

11.
$$\frac{120^{-2/5} \cdot 120^{2/5}}{7^{-3/4}}$$

$$\frac{120^{-\frac{2}{5}+\frac{2}{5}}}{7^{-\frac{3}{4}}} = \frac{120^{\circ}}{7^{\frac{-3}{4}}}$$

PROPERTIES OF RADICALS Simplify the expression.

21.
$$\frac{\sqrt[4]{36} \cdot \sqrt[4]{9}}{\sqrt[4]{4}}$$

SIMPLEST FORM Write the expression in simplest form.