

Multiplying Fractional Expressions

*Be sure to simplify.

✓①

$$\frac{3}{4} \text{ of } \frac{5}{16} = \frac{\cancel{3} \cdot \cancel{5}}{\cancel{4} \cdot 16} = \frac{3 \cdot 5}{4 \cdot 16} = \frac{15}{64}$$

$$\frac{216}{4}$$

✓②

$$\frac{\cancel{1} \cdot \cancel{10}}{15 \cdot 21} = \frac{7 \cdot 10}{15 \cdot 21} = \frac{\cancel{7} \cdot \cancel{10} \cdot 2}{\cancel{3} \cdot \cancel{5} \cdot \cancel{3}} = \frac{2}{9}$$

✓③

$$\frac{4x^3}{9} \cdot \frac{3}{x} = \frac{4 \cdot x^3 \cdot 3}{9 \cdot x} = \frac{4 \cdot \cancel{3} \cdot x^{\cancel{3}}}{\cancel{3} \cdot \cancel{3} \cdot x^{\cancel{1}}} = \frac{4x^2}{3}$$

✓④

$$\frac{4y^6}{21} \cdot \frac{4y^3}{1} = \frac{4 \cdot 4 \cdot y^{\cancel{6}} \cdot y^{\cancel{3}}}{21} = \frac{4 \cdot 4 \cdot y^9}{3 \cdot 7} = \frac{8y^9}{3}$$

✓⑤

$$\frac{\cancel{36} \cdot \cancel{12} c^3}{\cancel{4} c} = \frac{36 \cdot 12 \cdot c^{\cancel{3}}}{4 \cdot 9 \cdot c^{\cancel{1}}} = \frac{\cancel{4} \cdot \cancel{9} \cdot 12 \cdot c^2}{\cancel{4} \cdot \cancel{9}} = 12c^2$$

✓⑥

$$\frac{15a^4}{1} \cdot \frac{3}{5a^2} = \frac{15 \cdot 3 \cdot a^{\cancel{4}}}{5 \cdot a^{\cancel{2}}} = \frac{\cancel{3} \cdot \cancel{5} \cdot 3 \cdot a^2}{\cancel{5}} = 9a^2$$

✓⑦

$$\frac{\cancel{6} a^2 c^3}{5} \cdot \frac{25}{a^5 c^3} = \frac{\cancel{6} \cdot 25 \cdot a^{\cancel{2}} \cdot c^{\cancel{3}}}{5 \cdot a^{\cancel{5}} \cdot c^{\cancel{3}}} = \frac{\cancel{6} \cdot \cancel{5} \cdot 5}{\cancel{5} \cdot a^3} = \frac{30}{a^3}$$