

Multiplying Fractional Expressions

*Be sure to simplify.

✓①

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

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

✓②

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

✓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

$$\frac{4y^6}{21} \cdot \frac{14y^3}{1} = \frac{4 \cdot 14 \cdot y^{\cancel{6}} \cdot y^{\cancel{3}}}{21} = \frac{\cancel{4} \cdot \cancel{2} \cdot 7 \cdot y^9}{\cancel{3} \cdot 7} = \frac{8y^9}{3}$$

✓⑤

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

✓⑥

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

✓⑦

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