Objective #12

Rationalize denominators **(Page 1 of 2)**

Rationalize the denominator:

1. $\frac{\sqrt{15}}{\sqrt{5q}}$ [A] $\frac{\sqrt{3q}}{q}$ [B] $\frac{\sqrt{3}}{q}$ [C] $\frac{\sqrt{15}}{5q}$ [D] $\sqrt{15}$

$\frac{\sqrt{15}}{\sqrt{5q}} \cdot \frac{\sqrt{5q}}{\sqrt{5q}} = \frac{\sqrt{15 \cdot 5q}}{5q}$ reduce

$\frac{\sqrt{5 \cdot 5 \cdot 3 \cdot q}}{5q} = \frac{\sqrt{5^2} \cdot \sqrt{3q}}{5q}$

$= \frac{5\sqrt{3q}}{5q} = \frac{\sqrt{3q}}{q}$

2. $\frac{\sqrt{108x^7y}}{\sqrt{3x^5y^2}}$ [A] $\frac{\sqrt{36x^2}}{\sqrt{y}}$ [B] $\frac{\sqrt{324x^{12}y^3}}{\sqrt{3x^5y^2}}$ [C] $\frac{36x^4}{y}$ [D] $\frac{6x\sqrt{y}}{y}$

Rewrite with single radical

$\sqrt{\frac{108x^7y}{3x^5y^2}}$

Reduce

$\sqrt{\frac{36x^2}{y}}$

Separate

$\frac{\sqrt{36x^2}}{\sqrt{y}}$

$\frac{6x}{\sqrt{y}}$ not simplified yet!

$\frac{6x}{\sqrt{y}} \cdot \frac{\sqrt{y}}{\sqrt{y}} = \frac{6x\sqrt{y}}{y}$