

Warm-up #2: Simplifying Rational Expressions

$$1. \frac{\cancel{xy} \cdot \cancel{x^2} y z}{\cancel{x^2} \cancel{y^2} \cdot x} = \boxed{xz}$$

$$2. \frac{2x+y}{4x^2-y^2} = \frac{\cancel{2x+y}}{(\cancel{2x+y})(2x-y)} \cdot \boxed{\frac{1}{2x-y}}$$

$$3. \frac{x^4+2x^2+1}{x^2+1} = \frac{(x^2+1)(x^2+1)}{\frac{x^2+1}{x} \cdot x} \cdot \frac{x}{x^2+1}$$

$$\frac{x(x^2+1)}{x^2+1}$$

$$x(x^2+1)$$

$$\boxed{x^3 + x}$$

$$4. \frac{x \cdot x - \frac{y}{x}}{x}$$

$$\frac{x^2}{x} - \frac{y}{x}$$

$$\boxed{\frac{x^2 - y}{x}}$$