

Properties of real numbers
Practice problems

NAME:

Here are some practice problems. Simplify the following expressions. State the property or properties that contribute to each step. The first one is done for you.

a.) $\frac{x^2}{y} * \left(\frac{10 + 5x + 7x + 6}{4xy} \right)$

$$\frac{x^2}{y} * \left(\frac{10 + 5x + 7x + 6}{4xy} \right)$$

$$= \frac{x^2}{y} * \left(\frac{16 + 12x}{4xy} \right)$$

$$= \frac{x^2}{y} * \left(\frac{4(4 + 3x)}{4xy} \right)$$

$$= \frac{x^2}{y} * \left(\frac{(4 + 3x)}{xy} \right)$$

$$= \frac{x^2(4 + 3x)}{xy^2}$$

$$= \frac{x(4 + 3x)}{y^2}$$

Commutativity of addition,
combining like terms

Distribution
property

Canceling
common factors

Multiplying fractions

Canceling
common factors

b.) $5ab^3 * \left(\frac{6a^2 - 8a}{10a^2b^3} \right)$

$$\text{c.) } \frac{2}{yz} * \frac{3xyz^2 - 4xz}{2}$$

$$\text{d.) } (5a + 6a) \frac{12xy^2}{3x}$$

$$\text{e.) } \left(\frac{4xy^2 + 2x}{6y^2 + 3} \right)^2$$

$$f.) 4(3x^2 + x - 5) + x^2 + 2x$$

$$g.) 2(3xy + 4x^3 + 7xy) - 9xy - 2x^3$$