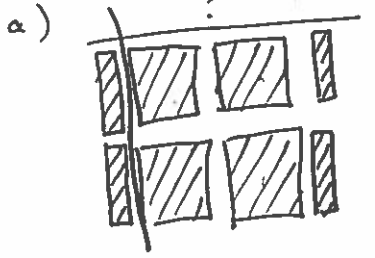


C: Dividing Polynomials by Monomials

I: Algebra Tiles

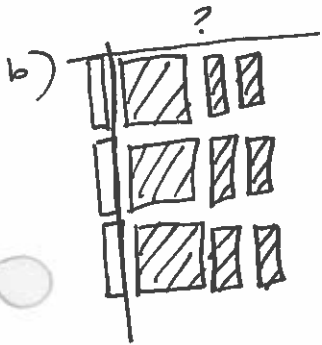
Examples: 1. What division statement is represented by the tiles? What is the quotient?



$$\Rightarrow \frac{\text{Middle side}}{2x} \\ \frac{4x^2 + 2x}{2x}$$

Quotient

$$2x + 1$$



$$\frac{3x^2 + 6x}{-3x}$$

Quotient

$$-x - 2$$

II: Algebraically

1. Divide each term separately.

2. # ÷ #; variable ÷ variable (subtract exponents if you can.)

Example:

1. Divide.

a) $\frac{4y^2 + 8.4y}{4y}$

$$\frac{4y^2}{4y} + \frac{8.4y}{4y}$$

$$= y^{2-1} + 2.1$$

$$= y + 2.1$$

b) $\frac{-36y^2 - 12y}{-12y}$

$$= \frac{-36y^2}{-12y} + \frac{-12y}{-12y}$$

$$= 3y + 1$$

$$c) \frac{4x^2 + 16xy}{2x}$$

$$= \frac{4x^2}{2x} + \frac{16xy}{2x}$$

$$= 2x + 8y$$

$$d) \frac{-28w^2 - 14w + 1}{0.5}$$

$$= \frac{-28w^2}{0.5} - \frac{14w}{0.5} + \frac{1}{0.5}$$

$$\boxed{-56w^2 - 28w + 2}$$

$$e) \frac{\frac{4}{3}b^2 - \frac{2}{3}ab + \frac{2}{3}b}{\frac{2}{3}b}$$

$$\frac{2}{3}b$$

$$= \frac{\frac{4}{3}b^2}{\frac{2}{3}b} - \frac{\frac{2}{3}ab}{\frac{2}{3}b} + \frac{\frac{2}{3}b}{\frac{2}{3}b}$$

$$\frac{4}{3} \div \frac{2}{3}$$

$$\frac{4}{3} \times \frac{3}{2} = \frac{4}{1} = 2$$

$$= 2b - a + 1$$

$$\boxed{= 2b - a + 1}$$

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