

Unit 6 Multiplying & Dividing Polynomials

6.3 Dividing Polynomials by Monomials

Ex. Simplify:

a) $\frac{6x-3}{3}$

Split up into a series of $\frac{\text{mono}}{\text{mono}}$ divisions

$$\frac{6x}{3} = \frac{3}{3}$$

$$\boxed{2x - 1}$$

b) $\frac{3x^3+6x}{3x}$

$$\frac{3x^3}{3x^1} + \frac{6x}{3x} \quad \# \text{ check}$$

$$\boxed{x^2 + 2}$$

$$3x(x^2 + 2)$$

$$3x^3 + 6x$$

c) $\frac{10a^5-15a^3+5a^2}{-5a^2}$

$$\frac{10a^5}{-5a^2} \quad \frac{-15a^3}{-5a^2} \quad \frac{+5a^2}{-5a^2}$$

$$\boxed{-2a^3 + 3a - 1}$$

d) $\frac{15x^4y^3-12x^2y^2}{-3x^2y}$

$$\frac{15x^4y^3}{-3x^2y} \quad \frac{-12x^2y^2}{-3x^2y}$$

$$\boxed{-5x^2y^2 + 4y}$$

Ex. A rectangle has an area of $36x^2 + 18x$, if the width is $9x$ determine an expression for the length.

$$A = l \times w$$

$$l = \frac{A}{w}$$

$$= \frac{36x^2 + 18x}{9x}$$

$$\frac{36x^2}{9x} + \frac{18x}{9x} \quad \boxed{4x + 2}$$