

**OBJECTIVE 1: Dividing by a Polynomial****TASK 1:** Divide, and write your answer in simplest form.

a)  $\frac{6m^2 + 2m}{2m}$

$$\frac{6m^2 + 2m}{2m} = \frac{3m^2}{1} + \frac{2m}{2m} = 3m + 1$$

$$\frac{3m}{1} + \frac{1}{1} = \boxed{3m + 1}$$

b)  $8w^3 + 4w^2$  by  $4w^2$

$$\frac{8w^3 + 4w^2}{4w^2} = \frac{2w^3}{1} + \frac{4w^2}{4w^2} = 2w + 1$$

$$= \boxed{2w + 1}$$

**TASK 2:** Divide. Leave answer in simplest form.

a)  $\frac{9x^5 - 12x^2 + 3x}{3x^2}$

$$\frac{9x^5 - 12x^2 + 3x}{3x^2} = \frac{3x^3}{1} - \frac{12x^2}{3x^2} + \frac{3x}{3x^2} = 3x^3 - 4 + \frac{1}{x}$$

$$\boxed{3x^3 - 4 + \frac{1}{x}}$$

b)  $\frac{16x^6 + 20x^3 - 12x}{4x^2}$

$$\frac{16x^6 + 20x^3 - 12x}{4x^2} = \frac{4x^4}{1} + \frac{5x^3}{1} - \frac{12x}{4x^2} = 4x^4 + 5x - \frac{3}{x}$$

$$\boxed{4x^4 + 5x - \frac{3}{x}}$$

TASK 3: Divide. Leave answer in simplest form.

a)  $\frac{8x^2y^2 - 16xy + 2x}{4xy}$

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

$$2xy - 4 + \frac{1}{2y}$$

b)  $\frac{15x^4y^4 - 10xy + y}{5xy}$

$$\frac{3\cancel{15}x^4\cancel{y}^4 - \cancel{10}xy + \cancel{y}}{\cancel{5}xy} = \frac{3x^3y^3}{1} - \frac{10xy}{5xy} + \frac{y}{5xy}$$

$$= 3x^3y^3 - 2 + \frac{1}{x}$$

Common Mistakes:

everything on top ÷ by entire bottom

Still need help with: