

Bell Work 2-12

Simplify

$$1) 3m^2(10 + m)$$

$$3(10)m^2 = 30m^2$$

$$3(1)(m^2 + 1) = 3m^3$$

$$30m^2 + 3m^3$$

$$(2) -8y^3(7y^2 - 4y - 1)$$

$$-8(7)(y^{3+2}) = -56y^5$$

$$-8(-4)y^{3+1} = 32y^4$$

$$-8(-1)y^3 = 8y^3$$

$$-56y^5 + 32y^4 + 8y^3$$

Factoring - Finding the GCF

- #1 Question = What does each term have in common
- What # can each term be divided by
- What is the smallest exponent?

Find the GCF. = Greatest Common Factor

1) $5x^3 + 25x^2 + 45x$ Divided by 5
 $GCF = 5x$ $x^1 = \text{smallest exponent}$

2) $3x^4 - 9x^2 - 12x$
 $GCF = 3x$

3) $45b + 27$
 $GCF = 9$

$45 = 1, 3, 5, 9, 15, 45$
 $27 = 1, 3, 9, 27$

$$4) a^3 + 6a^2 - 11a$$

$$GCF = 1a \text{ or } a$$

$$5) 4x^3 + 12x - 28$$

$$GCF = 4$$

$$1) \quad \frac{5x^3}{5x} + \frac{25x^2}{5x} + \frac{45x}{5x}$$

$$5x (1x^2 + 5x + 9)$$

$$2) \quad \frac{3x^4}{3x} - \frac{9x^2}{3x} - \frac{12x}{3x} \quad \boxed{\begin{array}{c} \text{GCF} \\ 3x \end{array}}$$

$$3x (1x^3 - 3x - 4)$$

$$\text{GCF} = 5x$$

- Divide the numbers
- subtract exponents
- Put () around new polynomial
- Put the GCF in front of ()

$$3) \quad \frac{45b}{9} + \frac{27}{9}$$

$$\text{GCF} = 9$$

$$9(5b + 3)$$

$$4) \frac{a^3}{a} + \frac{6a^2}{a} - \frac{11a}{a}$$

$$GCF = a$$

$$a(a^2 + 6a - 11)$$

$$5) \frac{\cancel{4}x^3}{\cancel{4}} + \frac{12x}{4} - \frac{28}{4}$$

$$GCF = 4$$

$$4(x^3 + 3x - 7)$$

$$1) \quad \frac{16g}{16} + \frac{32}{16} \quad GCF = 16$$
$$16(g + 2)$$

$$7) \quad \frac{7g^4}{7g^2} + \frac{21g^3}{7g^2} - \frac{14g^2}{7g^2} \quad GCF = 7g^2$$
$$7g^2(g^2 + 3g - 2)$$