Reteaching 10-2

OBJECTIVE: Factoring a monomial from a polynomial	**MATERIALS:** None

- To factor a polynomial you must find the **Greatest Common Factor**. The **GCF** is the greatest factor that divides evenly into each term.

Example

Factor $18x^3 + 6x^2 - 12x$.

a. First find the GCF.

$18x^3 = ②③\ 3\ (x)\ x\ x$ ⟵ **List the factors of each term. Circle**
$6x^2\ = ②③\ x\ (x)$ **the factors common to all terms.**
$12x\ =\ \ ②\ 2\ ③(x)$

$2 \cdot 3 \cdot x = 6x$ ⟵ **Multiply the circled terms together to get the GCF.**

b. Factor out the GCF from each term.

$\dfrac{18x^3}{6x} = 3x^2$ ⟵ **Divide each term by the GCF.**

$\dfrac{6x^2}{6x} = x$

$\dfrac{-12x}{6x} = -2$

$6x(3x^2 + x - 2)$ ⟵ **Solution**

Activity

Use the GCF to factor each expression.

1. $21x - 14$ **2.** $5y^3 - 10y^2 + 15y$ **3.** $x^3 + 3x^2 + x$

4. $3x^2 + 6x^4$ **5.** $18x^3 - 6x^2 + 24x$ **6.** $z^3 - 3z^2$

7. $12k^3 + 6k^2 - 18k$ **8.** $6x^3 - 4x^2 + 8x$ **9.** $8p^4 + 12p^2 + 4p$

Reteaching 10-3

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OBJECTIVE: Multiplying two binomials	**MATERIALS:** None

To multiply two binomials, follow these steps:

- Multiply each term in one binomial by each term of the other binomial. Drawing arrows as a visual reminder of what to do is a helpful technique.

- Circle like terms and combine.

Example

Find the product $(x + 7)(x + 2)$.

$(x + 7)(x + 2)$ ⟵ **Draw arrows from the first term in the first binomial to both terms in the second binomial.**

$x^2 + 2x$ ⟵ **Multiply each term of the second binomial by x.**

$(x + 7)(x + 2)$ ⟵ **Draw arrows from the second term in the first binomial to both terms in the second binomial.**

$7x + 14$ ⟵ **Multiply each term of the second binomial by 7.**

$x^2 + \boxed{2x} + \boxed{7x} + 14$ ⟵ **Circle like terms and combine.**

$x^2 + 9x + 14$ ⟵ **Solution**

Activity

Find each product by drawing arrows first.

1. $(x + 6)(x - 2)$ **2.** $(x - 8)(x - 4)$ **3.** $(x - 3)(x + 9)$

4. $(x + 2)(x - 7)$ **5.** $(2x + 3)(x + 4)$ **6.** $(x + 4)(2x + 5)$

Additional Exercises

Find each product.

7. $(7x + 4)(2x - 4)$ **8.** $(3x + 2)(3x + 2)$ **9.** $(5x + 1)(x + 1)$