

Name: _____

F.1 Factoring GCMF

Date: _____

- The GCMF of a polynomial is the largest monomial that can divide each term of the polynomial.

42: $\begin{matrix} 6 & & 2 \\ & \swarrow & \searrow \\ 7 & & 3 \end{matrix}$ $\begin{matrix} 2 & 3 \\ 2 & 2 \cdot 2 \cdot 2 \cdot 3 \end{matrix} = 6$

48: $\begin{matrix} 6 & & 2 \\ & \swarrow & \searrow \\ 8 & & 3 \end{matrix}$ $\begin{matrix} 2 & 2 & 3 \\ 2 & 2 & 3 \end{matrix} = 6$

The GCMF is 6 because that is the largest monomial that can divide into both 42 and 48.

24: $\begin{matrix} 6 & & 2 \\ & \swarrow & \searrow \\ 4 & & 3 \end{matrix}$ $\begin{matrix} 2 & 2 & 3 \\ 2 & 3 & 3 \end{matrix} = 6$

54: $\begin{matrix} 6 & & 2 \\ & \swarrow & \searrow \\ 9 & & 3 \end{matrix}$ $\begin{matrix} 2 & 2 & 3 \\ 2 & 3 & 3 \end{matrix} = 6$

The GCMF is 6 because that is the largest monomial that can divide into both 24 and 54.

$\frac{8x+24}{8} \quad \frac{8x+24}{8}$

GCMF: 8

Factored form: $8(x+3)$

$\frac{5x-30}{5} \quad \frac{5x-30}{5}$

GCMF: 5

Factored form: $5(x-6)$

$\frac{21x^4+9x^2}{3x^2} \quad \frac{21x^4+9x^2}{3x^2}$

GCMF: $3x^2$

Factored form: $3x^2(7x^2+3)$

$\frac{7x^5-49x^3}{7x^3} \quad \frac{7x^5-49x^3}{7x^3}$

GCMF: $7x^3$

Factored form: $7x^3(x^2-7)$

You Try! $\frac{6x^3+18x^2+12x}{6x} \quad \frac{6x^3+18x^2+12x}{6x}$

GCMF: $6x$

Factored form: $6x(x^2+3x+2)$

HW! Find the greatest common monomial factor in each expression below, then write in factored form.

<p>1. $3x - 6y$</p> <p>GCMF: Factored form:</p>	<p>2. $8x^2 + 6x$</p> <p>GCMF: Factored form:</p>
<p>3. $15a^4 - 10a^7$</p> <p>GCMF: Factored form:</p>	<p>4. $8y + 12y^4$</p> <p>GCMF: Factored form:</p>
<p>5. $20x^2y + 24xy^2$</p> <p>GCMF: Factored form:</p>	<p>6. $28a^2b^3 - 21ab^2$</p> <p>GCMF: Factored form:</p>
<p>7. $-6x^3 + 10x^2 - 2x$</p> <p>GCMF: Factored form:</p>	<p>8. $16y^5 - 8y^3 + 9y^2$</p> <p>GCMF: Factored form:</p>
<p>9. $8x^4 - 4x^3 + 16x^2 - 4x + 24$</p> <p>GCMF: Factored form:</p>	<p>10. $9a^3b^4 - 3a^2b^3 + 6ab^2$</p> <p>GCMF: Factored form:</p>