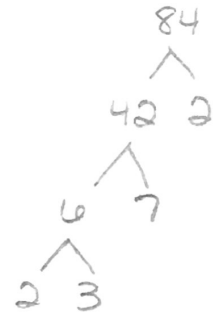---

*I can **factor linear expressions**.*

Factoring Algebraic Expressions

Step 1: List the ___factors___ of each of the ___terms___ .

Step 2: ID the ___greatest common factor___ .

Step 3: Factor out (___divide by___) the GCF.

1) $8x + 32$

Factors of 8x $2 \cdot 2 \cdot 2 \cdot x$

Factors of 32 $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

GCF 8

Rewrite $8(x + 4)$
("Factor out" the GCF)

2) $49y + 84$

Factors of 49y $\boxed{7} \cdot 7 \cdot y$

Factors of 84 $2 \cdot 3 \cdot \boxed{7} \cdot 2$

GCF 7

Rewrite $7(7y + 12)$
("Factor out" the GCF)

84
$42 \quad 2$
$6 \quad 7$
$2 \quad 3$

Together

1) Factor: $12y - 16$

$$4(3y - 4)$$

2) Factor: $6x + 3y$

$$3(2x + y)$$

3) Factor: $6x + 24y + 6$

$$6(x + 4y + 1)$$

On Your Own

1) Factor: $21y - 12$

$$3(7y - 4)$$

2) Factor: $4x + 18y$

$$2(2x + 9y)$$

3) Factor: $21x + 7y + 14$

$$7(3x + y + 2)$$

Together

1) Factor: $12xy + 15xyz - 3xyz$

$$3xy(4 + 5z - z)$$
$$3xy(4 + 4z)$$

2) Factor: $-6abc - 21abc + 15ac$

$$-3ac(2b + 7b - 5)$$
or
$$3ac(-2b - 7b + 5)$$

On Your Own

1) Factor: $21xyz - 15xyz - 3xz$

$$3xz(7y - 5y - 1)$$
$$3xz(2y - 1)$$

2) Factor: $-8ab - 20abc + 14ac$

$$-2a(4b + 10bc - 7c)$$
or
$$2a(-4b - 10bc + 7c)$$