Fun with Factoring!

Goals:

- 1. To factor out a Greatest Common Factor.
- 2. To factor by grouping.

A: you write the poly as a product of other polys.

Ex Factor out the greatest common factor (GCF).

a)
$$6t^{3}-12t$$

6t $(t-2)$

6t $(t-2)$

GCF
$$(6, 12) = 6$$

GCF $(£^2, t') = t$
GCF $(x^6, x^4) = x^4$

$$8t(rt^{7}+5t^{5}-3)$$

c)
$$15m^4n + 30m^5n^2 + 25m^3n^3$$

 $5m^3n(3m+6m^2n+5n^2)$

EX Factor out the negative GCF: $-2 \times^{2} + 4 \times^{4} - 12 \times^{3}$ $-2 \times^{2} (1 - 2 \times^{2} + 6 \times)$

$$(r-s)(t-3)$$

$$(r-s)(t-3)$$

$$(r-s)(t-3)$$

Ex Factor by Grouping

a)
$$y^3 - y^3 + 3y - 3 \cdot 1$$

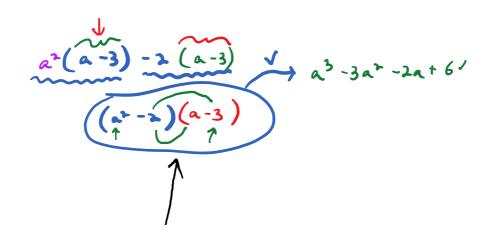
$$(y^{2}+3)(\gamma-1)$$

b)
$$t^3 + 6t^2 - 2t - 12$$

 $t^2(t+6) - 2(t+6)$
 $(t^2 - 2)(t+6)$

c)
$$a^3 - 3a^3 + 6 - 2a$$

 $-2(-3 + a)$



$$2y^{4}(y^{4}3) - 5(y-3)$$

CW 5.3

- ① Factor out the GCF: $24x^{3}y^{4} 18xy^{3} 42x^{4}y^{5}$ $6xy^{3}(4xy - 3 - 7x^{3}y^{2})$
- Factor by Grouping: XY+XZ-WY-WZ

 (Y+Z)(X-W)

(3) Factor by Grouping:
$$4x^2 + 8x + x + 2$$

$$4x(x+2) + 1(x+2)$$

