Intro to Factoring

A2CR

1.

greatest common factor

* divide what they have in common out

ex1 $\frac{32x}{8} + \frac{8}{8}$

$8(4x+1)$

ex2 $\frac{x^2}{x} - \frac{4x}{x}$

$x(x-4)$

ex3 $\frac{5x^3}{5x^2} - \frac{10x^2}{5x^2}$

$5x^2(x-2)$

ex4 $\frac{12x^2}{12} - \frac{24x}{12} + \frac{36}{12}$

$12(x^2-2x+3)$

ex5 $\frac{3a^2bc^4}{3abc} + \frac{9ab^3c}{3abc}$

$3abc(ac^3+3b^2)$

a=1

ex1 $x^2 + 6x + 8$

add's 4 & 2 multiplies

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

ex2 $x^2+12x+27$

$(x+9)(x+3)$

ex3 $x^2-10x+16$

$(x-8)(x-2)$

ex4 $x^2-5x-14$

$(x-7)(x+2)$

ex5 x^3+4x^2-21x

ex6 $2x^2+14x+12$

$a \neq 1$

ex 1 $2x^2+5x-12$

$a \cdot c = -24$, $b = 5$

answers: -3 & 8

$2x^2 - 3x + 8x - 12$

$x(2x-3) + 4(2x-3)$

$\boxed{(2x-3)(x+4)}$

same — fronts

steps!

1. $a \cdot c$ & find b
2. what 2 #s multiply to get ac and add to b?
3. replace b w/ answers
4. factor by grouping
5. final answer

ex 2 $3x^2-2x-8$ $\quad a \cdot c = -24,\ b = -2 \} -6$ & 4

$3x^2-6x+4x-8$

$3x(x-2)+4(x-2)$

$(3x+4)(x-2)$

ex 3 $2x^2-9x-35$ $\quad a \cdot c = -70,\ b = -9 \} -14$ & 5

$2x^2-14x+5x-35$

$2x(x-7)+5(x-7)$

$(2x+5)(x-7)$