

Chapter 4: Factoring

So far: standard

$$y = ax^2 + bx + c$$

Factor

factored

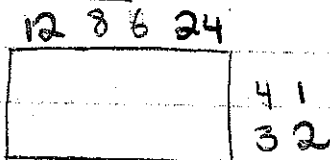
$$y = a(x-r)(x-s)$$

Expand

simplify

Simple example

$$A = 24$$



$$\begin{aligned} A &= L \times W \quad \bullet 2 \times 12 = 24 \\ &= 6 \times 4 \quad \bullet 8 \times 3 = 24 \\ &= 24 \times 1 \quad \bullet 24 \times 1 = 24 \end{aligned}$$

Today we will focus on Greatest Common Factor (GCF)

① ex. a GCF for 22 and 30

2 ✓ 11 and 15

② $\frac{22}{22}$ and $\frac{44}{22}$ GCF = 22 1 and 2

Factor / Find GCF

③ $\frac{3x}{3x} + \frac{30x^2}{3x} = 3x(1 + 10x)$

④ $\frac{15x^2}{15x} + \frac{45x}{15x} = 15x(x + 3) : \text{GCF}$

⑤ $\frac{-4x^2}{-4} - \frac{12x}{-4} + \frac{8}{-4} = -4(x^2 + 3x - 2)$

⑥ $\frac{-10x^2}{-5} + \frac{5x}{-5} + \frac{25}{-5} = -5(2x^2 - x - 5)$
 $= (2x^2 - 1x - 5)$

⑦ If this paper is represented by $20x^2 - 5x$, what are its dimensions.

$$\frac{20x^2 - 5x}{5x \cdot 5x} = 5(4x - 1)$$

$$A = \frac{20x^2 - 5x}{5x \cdot 5x}$$

$5x ?$

$4x - 1 ?$