I. Factoring:

To “factor” an expression completely means to write it as a product of its (prime*) factors...

\[ 30 = 2 \cdot 3 \cdot 5 \quad \text{or} \quad 6x + 12 = 6(x + 2) \]

*see section 1.6 (p.59)

II. Greatest Common Factor (p.385):

1. Definition: A common factor is a factor common to every term in the expression...

2. \[ ab + ac - ad = a(b + c - d) \]

\[ i.e., \text{ the } \textit{Distributive Property} \quad \text{(but applied in reverse fashion)} \]

3. Examples (p.390): Problems #2, 4, 8, 10, 16, 22
IV. Group Factoring (p.388):
   1. Examples (p.391): Problems #64,66
   2. Not covered on any quiz/exam...
      *i.e.*, Problems #43-56 (pp.390-391) will not be covered

HW: p.390 / Problems #1,3,7,9,11,15,19,21,29,33, 63,65

Read pp.395-398 (section 6.2)
I. Factoring Trinomials, Part 1:

1. \((x + m)(x + n) = x^2 + x \cdot n + m \cdot x + m \cdot n\)
\[= x^2 + nx + mx + mn\]
\[= x^2 + (n + m)x + mn\]
\[= x^2 + (m + n)x + mn\]
\[= x^2 + bx + c\]

provided: \(b = m + n\) \& \(c = m \cdot n\)

2. **Find** two numbers, \(m\) \& \(n\) whose **sum** is “b” and whose **product** is “c.”

3. Factor \(x^2 + 5x + 4\) as \((x + m)(x + n)\)
   
   need \(m + n = 5\) \& \(4 = m \cdot n\)
   
   *i.e.*, \(m = 1\) \& \(n = 4\)
   
   \(\therefore x^2 + 5x + 4 = (x + 1)(x + 4)\)
II. Examples (p.399): Problems #2-26(even), 42, 62

HW: p.399 / Exercises #1-25(every other odd), 41, 45, 47, 61, 63

Read pp.395-398 (section 6.2)