I. Factor: \( ax^2 + bx + c \) (when \( a = 1 \), see section 6.2)

II. Factor: \( ax^2 + bx + c \) (when \( a \neq 1 \), see section 6.3)

\[
ax^2 + bx + c = (px + m)(rx + n)
\]

find four numbers \( m, n, p & q \)
such that: \( pr = a, \ np + mr = b \) & \( mn = c \)

\[
\text{F O I L}
\]

e.g., factor “6\( x^2 + 17x + 12 \)”

\[
a = ___, \ b = ___, \ c = ____
\]
factors of 6 are ____ , ____ , ____ and ____
factors of 12 are ____ , ____ , ____ , ____ , ____ and ____

need to find four numbers/factors such that...

\[
p \cdot r = 6, \ m \cdot n = 12 \ \text{and} \ n \cdot p + m \cdot r = ____
\]

try \((2x + m)(3x + n)\) with \( m = ____ \) and \( n = ____ \)

\[
\text{FOIL} \ \ (2x + 3)(3x + 4) = 6x^2 + _____ + ____
\]
III. Examples (p.406): Problems #2, 8, 10, 16, 24, 34, 36, 40, 42

IV. Application (p.407): Problem #66

HW: pp.406-407 / Problems #1-13 (every other odd), 19, 29, 31, 35, 39-51 (odd), 61, 63, 65
Read pp.409-413 (section 6.4)