

## I. Factor “ $x^2 + bx + c$ ” (p.351):

$$\begin{aligned}
 1. \quad (x + p)(x + q) &= x^2 + xq + px + pq \\
 &= x^2 + qx + px + pq \\
 &= x^2 + px + qx + pq \\
 &= x^2 + (p+q)x + pq
 \end{aligned}$$

*i.e.*, find two numbers “p” & “q” such that...

$$x^2 + bx + c = x^2 + (p+q)x + pq$$

need  $pq = c$  and  $p+q = b$

2. Examples (p.361): Exercises #8,18,22,32,36

## II. Factor “ $x^{2n} + bx^n + c$ ” (p.356):

1. “u”-substitution, let  $x^n = u$  then  $u^2 =$  \_\_\_\_\_

$$\text{and... } x^{2n} + bx^n + c = u^2 + bu + c$$

same criteria for p & q (*i.e.*, need  $pq = c$  &  $p+q = b$ )

$$\text{as then... } (u + p)(u + q) = x^{2n} + bx^n + c$$

2. Examples (p.361): Exercises #40,42

HW: p.361 / Exercises#3,7,11,15,19,21,31-41(odd)  
Re-read pp.356-360 (section 5.4 ~  $ax^2 + bx + c$ )