

$$a^2 - b^2 = (a - b)(a + b)$$

Example 2: Factor the following expressions (new!):

1.  $(x + 3)^2 - 6(x + 3) - 16$

$$= a^2 - 6a - 16$$

$$= (a - 8)(a + 2)$$

$$= (x + 3 - 8)(x + 3 + 2)$$

$$= (x - 5)(x + 5)$$

Replace  $(x + 3)$  with a variable  
and as 'a'

$$a \approx (x + 3)$$

2.  $15(a - 2)^2 + 17(a - 2) - 4$

$$= 15z^2 + 17z - 4$$

$$(5z - 1)(3z + 4)$$

$$(5(a - 2) - 1)(3(a - 2) + 4)$$

$$(5a - 10 - 1)(3a - 6 + 4) \Rightarrow (5a - 11)(3a - 2)$$

let  $z = a - 2$

$$\begin{array}{r} 5 \quad -1 \\ \quad \quad 3 \quad 4 \end{array}$$

3.  $(3z + 1)^2 - (4z - 3)^2$

$$= (3z + 1) - (4z - 3) \quad (3z + 1) + (4z - 3)$$

$$= (-z - 2)(7z - 2)$$

4.  $9(x - 3)^2 - 25(y + 1)^4 = (3^2(x - 3)^2) - (5^2(y + 1)^2)^2$

$$[3(x - 3)]^2 - [5(y + 1)^2]^2$$

$$[3(x - 3) + 5(y + 1)^2][3(x - 3) - 5(y + 1)^2]$$

$$[3x - 9 + 5(y^2 + 2y + 1)][3x - 9 - 5(y^2 + 2y + 1)]$$

$$(3x + 5y^2 + 10y - 4)(3x - 5y^2 - 10y - 13)$$

Assignment Time!



p. 176 - questions 3, 4, 5, 6, 9a, 10a, 10b, 13, 15

p. 183 - multiple choice 1