

## Writing Polynomials in standard form

**Looking Back:** To rewrite quadratic equations standard form, you have used a box or double distribution to multiply the factors:

a)  $(x+5)(x-7) =$  \_\_\_\_\_


b)  $(2x - 4)(3x - 1) =$  \_\_\_\_\_


c)  $3(x-4)(x+6) =$  \_\_\_\_\_


Does the order of multiplication matter? Explain.

**Practice: C-Level**

Using the same methods, we can also multiply higher degree polynomials .

1)  $(x - 9)(x^2 + 3x - 9) =$

Answer: \_\_\_\_\_


2)  $(x - 5)(x^2 - 7x + 20) =$

Answer: \_\_\_\_\_


3)  $(3x + 1)(x^2 + 2x + 8) =$

Answer: \_\_\_\_\_


4)  $(x - 8)(x^2 + 12) =$

Answer: \_\_\_\_\_


5)  $(x^2 - 9)(x^2 + 8x - 4) =$

Answer: \_\_\_\_\_


6)  $(x^3 - 5x)(x^4 - 7x^2 + 20) =$

Answer: \_\_\_\_\_


**Practice B-Level**

7)  $(x-8)(x+4)(x-7) =$

Answer: \_\_\_\_\_



8)  $(2x + 4)(x - 7)(x + 3) =$

Answer: \_\_\_\_\_



9)  $(x + 5)(3x - 4)(x - 4)^2 =$  \_\_\_\_\_

**Looking Ahead Investigation:**

Name three tools you can use to find x-intercepts. Then apply those methods below.

1.

2.

3.

a)  $x^2 - 2x - 63 =$

b)  $x^2 + 8x - 33 =$

c)  $3x^2 - 11x + 6 =$

d)  $6x^2 - 13x + 5 =$

e)  $3x^2 - 7x - 4 =$

f)  $y = x^3 + 12x^2 + 44x + 48$  given one factor is  $(x + 2)$ .

Hint: this can help
