

# Chapter 8 § 7

## Multiplying Polynomials

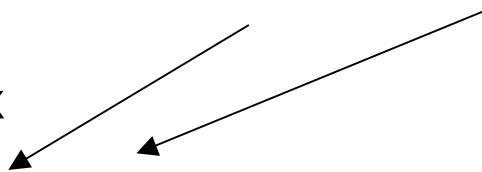
$$(3x + 9)(5x + 8)$$

$$(5x \cdot 3x) + (8 \cdot 3x)$$



$$15x^2 + 24x$$

$$(5x \cdot 9) + (8 \cdot 9)$$



$$45x + 72$$

---

$$15x^2 + 69x + 72$$

$$(m - 3)(m + 4)$$

$$(m + (-3))(m + 4)$$

$$m^2 + 4m$$

$$-3m + -12$$

---

$$m^2 + m + -12$$

$$(x - 4)(x + 9)$$

$$(x + (-4))(x + 9)$$

$$x^2 + 9x$$

$$-4x + -36$$

---

$$x^2 + 5x + -36$$

$$(3a + 11)(5a - 2)$$

$$(3a + 11)(5a + (-2))$$

$$15a^2 + (-6a)$$

$$55a + -22$$

---

$$15a^2 + 49a + -22$$

# Let's Heat This Lesson Up

$$(2y + 5)(3y^2 - 8y + 7)$$

$$(2y + 5)(3y^2 + (-8y) + 7)$$

$$6y^3 + (-16y^2) + 14y$$

$$15y^2 + (-40y) + 35$$

---

$$6y^3 + (-y^2) + (-26y) + 35$$

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

$$2x^3 + 6x^2 + 16x$$

$$3x^2 + 9x + 24$$

---

$$2x^3 + 9x^2 + 25x + 24$$

$$(3x + 4)(x^3 - 8x^2 + 9)$$

$$(3x + 4)(x^3 + (-8x^2) + 9)$$

$$3x^4 + (-24x^3) + \quad \quad \quad 27x$$

$$4x^3 + (-32x^2) + \quad \quad \quad 36$$

---

$$3x^4 + (-20x^3) + (-32x^2) + 27x + 36$$

# This Lesson is on Fire Now

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

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

$$3x^4 + (-7x^3) + 2x^2$$

$$12x^3 + (-28x^2) + 8x$$

$$-15x^2 + 35x + (-10)$$

---

$$3x^4 + 5x^3 + (-41x^2) + 43x + (-10)$$