

3.1 Multiplying Polynomials

Math 10

Multiplying Polynomials

Review:

Like Terms

Warm-up activity: Like Terms

Simplify each expression:

a) $6x + 4 + 8x + 3 = 14x + 7$

b) $2b - b + 7 - 8 = b - 1$

c) $3r^2 + 8 - 5r + 9r - 3r^2 = 4r + 8$

d) $4m^2n - 5n + 7m^2 + 16nm^2 - 12n = 20m^2n - 17n + 7m^2$

The Distributive Property: $a(x + y) = ax + ay$

Expand: a) $3(x + 2) = 3x + 6$

b) $-5(4m - 3) = -20m + 15$

c) $(2y + 5)(-4) = -8y - 20$

d) $2(5a^2 - 7a + 2)$
 $= 10a^2 - 14a + 4$

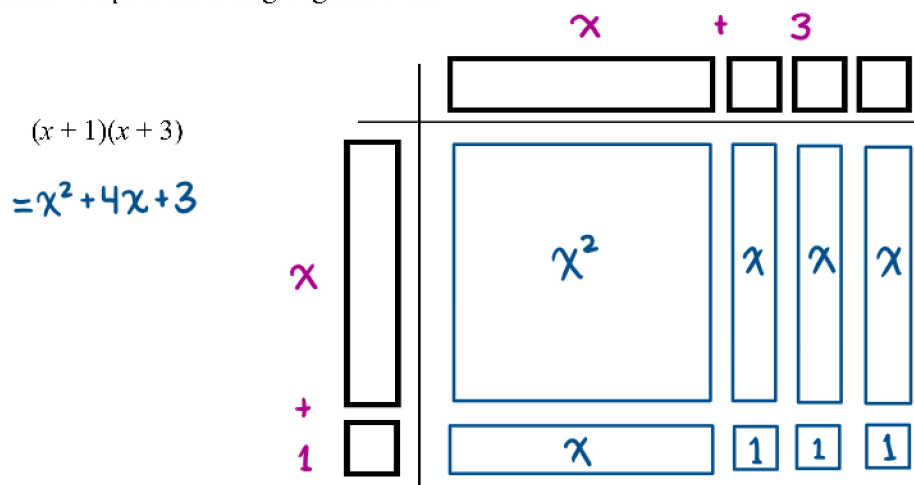
e) $x(x - 3) = x^2 - 3x$

f) $p(p^2 - 2p + 1)$
 $= p^3 - 2p^2 + p$

Multiplying Binomials:

$(a + b)(c + d) =$

Visual Perspective: Using Algebra Tiles



Algebraic Method:

"FOIL METHOD"

$(x + 1)(x + 3)$
 $= x^2 + 3x + x + 3$
 $= x^2 + 4x + 3$

"HAPPY FACE METHOD"

$(x + 1)(x + 3)$
 $= x^2 + 3 + x + 3x$
 $= x^2 + 4x + 3$

$(a + 5)(a + 2)$
 $= a^2 + 2a + 5a + 10$
 $= a^2 + 7a + 10$

$(x - 4)(x + 1)$
 $= x^2 + x - 4x - 4$
 $= x^2 - 3x - 4$

$2(m - 7)(m - 3)$
 $= (2m - 14)(m - 3)$
 $= 2m^2 - 6m - 14m + 42$
 $= 2m^2 - 20m + 42$

$(x - 8)^2 = (x - 8)(x - 8)$
 $= x^2 - 8x - 8x + 64$
 $= x^2 - 16x + 64$

$(5n + 3)(n - 2)$
 $= 5n^2 - 10n + 3n - 6$
 $= 5n^2 - 7n - 6$

$(x - 4y)(x + 3y)$
 $= x^2 + 3xy - 4xy - 12y^2$
 $= x^2 - xy - 12y^2$

$(2a + 4)(a^2 + 5a + 7) - 2(a - 1)$
 $= 2a^3 + 10a^2 + 14a + 4a^2 + 20a + 28 - 2a + 2$
 $= 2a^3 + 14a^2 + 32a + 30$

Assignment: p.87 #3, 5, 8 - 10, 12