

## DAY 3

Use the Distributive Principle to do each multiplication problem below.

$$3(2x-5) = 6x-15$$

$$5(6x-4) = 30x-20$$

$$(3a+4b)2 = 6a+8b$$

$$(x+5)10 = 10x+50$$

$$4(3x-y+5) = 12x-4y+20$$

$$5(3x-y+5) = 15x-5y+25$$

$$6(3x-y+5) = 18x-6y+30$$

$$(3x-y+5)7 = 21x-7y+35$$

$$-5(2x-4) = -10x+20$$

$$-4(3y+5) = -12y-20$$

$$-3(2a-5b) = -6a+15b$$

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

$$-4(3x^2-6x+2) = -12x^2+24x-8$$

$$-5(3x^2-6x+2) = -15x^2+30x-10$$

$$-1(3x^2-6x+2) = -3x^2+6x-2$$

$$(3x^2-6x+2)(-10) = -30x^2+60x-20$$

$$(2x-7)x = 2x^2-7x$$

$$(3y+5)y = 3y^2+5y$$

$$x(5-8y) = 5x-8xy$$

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

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

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

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

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

$$5x(4x-7) = 20x^2-35x$$

$$3a(4a+2) = 12a^2+6a$$

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

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

$$(3y-6)(-5y) = -15y^2+30y$$

$$7x(3x+4y) = 21x^2+28xy$$

$$3a(4a-2b+c) = 12a^2-6ab+3ac$$

$$5y(3x+4y-8) = 15xy+20y^2-40y$$

$$2xy(3x+4y-8) = 6x^2y+8xy^2-16xy$$

$$(7x^2-5x-6)6x^2 = 42x^4-30x^3-36x^2$$

$$-4b(a-3b+c) = -4ab+12b^2-4bc$$

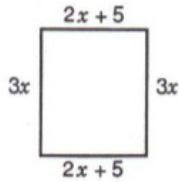
$$7x^2y(3x^2y+2xy^2+x^3) = 21x^4y^2+14x^3y^3+7x^5y$$

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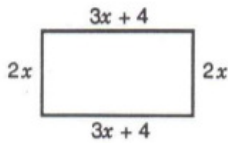
## SIMPLIFY EXPRESSIONS

Name: \_\_\_\_\_

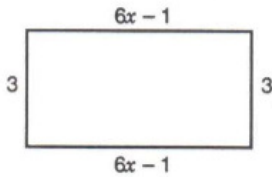
Write a polynomial for the area of each rectangle.



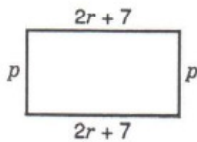
$$A = 3x(2x + 5) \\ = 6x^2 + 15x$$



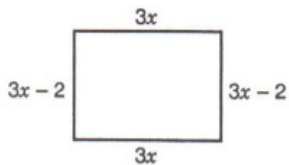
$$A = 2x(3x + 4) \\ = 6x^2 + 8x$$



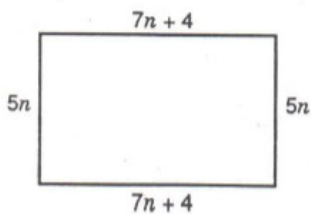
$$A = 3(6x - 1) \\ = 18x - 3$$



$$A = p(2r + 7) \\ = 2pr + 7p$$



$$A = 3x(3x - 2) \\ = 9x^2 - 6x$$



$$A = 5n(7n + 4) \\ = 35n^2 + 20n$$

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## SIMPLIFY EXPRESSIONS

Name: \_\_\_\_\_

Multiply each pair of binomials. Remember to multiply each term in the first binomial times each term in the second binomial.

$$(2x-3)(5x+4) = 10x^2 + 8x - 15x - 12 \\ = 10x^2 - 7x - 12$$

$$(3x-1)(4x+3) = 12x^2 + 9x - 4x - 3 \\ = 12x^2 + 5x - 3$$

$$(3x-4)^2 = (3x-4)(3x-4) \\ = 9x^2 - 12x - 12x + 16 \\ = 9x^2 - 24x + 16$$

$$(6x+1)(2x+3) = 12x^2 + 18x + 2x + 3 \\ = 12x^2 + 20x + 3$$

$$(5x+2)^2 = (5x+2)(5x+2) \\ = 25x^2 + 10x + 10x + 4 \\ = 25x^2 + 20x + 4$$

$$(5x+3)(3x+4) = 15x^2 + 20x + 9x + 12 \\ = 15x^2 + 29x + 12$$

$$(2x+5)(x-3) = 2x^2 - 6x + 5x - 15 \\ = 2x^2 - x - 15$$

$$(2x-3)^2 = (2x-3)(2x-3) \\ = 4x^2 - 6x - 6x + 9 \\ = 4x^2 - 12x + 9$$

$$(4x-1)(3x-1) = 12x^2 - 4x - 3x + 1 \\ = 12x^2 - 7x + 1$$

$$(4x+1)^2 = (4x+1)(4x+1) \\ = 16x^2 + 4x + 4x + 1 \\ = 16x^2 + 8x + 1$$

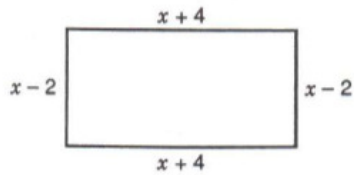
$$(3x-5)(2x-5) = 6x^2 - 15x - 6x + 25 \\ = 6x^2 - 21x + 25$$

$$(3x-7)^2 = (3x-7)(3x-7) \\ = 9x^2 - 21x - 21x + 49 \\ = 9x^2 - 42x + 49$$

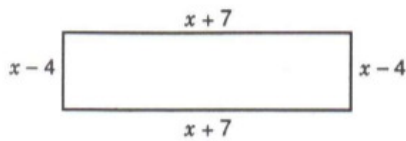
$$(4x-3)(x+3) = 4x^2 + 12x - 3x - 9 \\ = 4x^2 + 9x - 9$$

$$(3x+4)(3x-4) = 9x^2 - 12x + 12x - 16 \\ = 9x^2 - 16$$

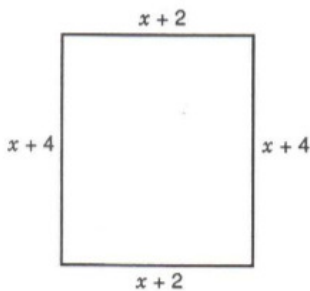
Write a polynomial for the area of each rectangle.



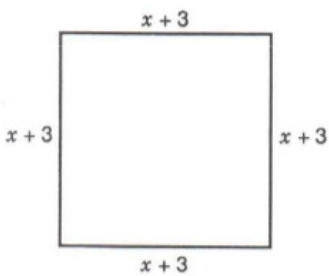
$$\begin{aligned} A &= (x-2)(x+4) \\ &= x^2 + 4x - 2x - 8 \\ &= x^2 + 2x - 8 \end{aligned}$$



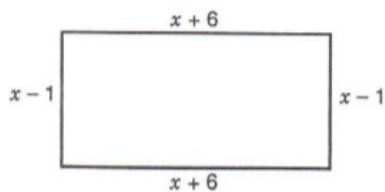
$$\begin{aligned} A &= (x-4)(x+7) \\ &= x^2 + 7x - 4x - 28 \\ &= x^2 + 3x - 28 \end{aligned}$$



$$\begin{aligned} A &= (x+4)(x+2) \\ &= x^2 + 2x + 4x + 8 \\ &= x^2 + 6x + 8 \end{aligned}$$



$$\begin{aligned} A &= (x+3)(x+3) \\ &= x^2 + 3x + 3x + 9 \\ &= x^2 + 6x + 9 \end{aligned}$$



$$\begin{aligned} A &= (x+6)(x-1) \\ &= x^2 - x + 6x - 6 \\ &= x^2 + 5x - 6 \end{aligned}$$