Name _____ Date _____ Class _____

LESSON 1-7

Challenge

Distributing More Than Once

Sometimes it is helpful to use the Distributive Property more than once.

Write the product 82(63) using the Distributive Property. Then simplify.

82(63)

$(80 + 2)(60 + 3)$ — *Rewrite 82 as 80 + 2, and rewrite 63 as 60 + 3.*

$(80 + 2)(60) + (80 + 2)(3)$ — *Use the Distributive Property to distribute (80 + 2).*

$80(60) + 2(60) + 80(3) + 2(3)$ — *Distribute 60 through (80 + 2). Do the same for 3.*

$4800 + 120 + 240 + 6$ — *Multiply.*

5166 — *Add.*

Write each product using the Distributive Property. Then simplify.

1. $51(74)$

2. $39(92)$

3. $96(98)$

You can also distribute several times to simplify algebraic expressions.

Use the Distributive Property to simplify the product $(x + 5)(x - 4)$.

$(x + 5)(x - 4)$

$(x + 5)[x + (-4)]$ — *To subtract 4, add −4.*

$(x + 5)(x) + (x + 5)(-4)$ — *Distribute (x + 5).*

$x(x) + 5(x) + x(-4) + 5(-4)$ — *Distribute x through (x + 5). Do the same for −4.*

$x^2 + 5x - 4x - 20$ — *Multiply. x(x) can be written as the power x^2.*

$x^2 + x - 20$ — *Combine like terms.*

Use the Distributive Property to simplify each product.

4. $(x + 3)(x + 8)$

5. $(x - 2)(x + 7)$

6. $(a + b)(c + d)$