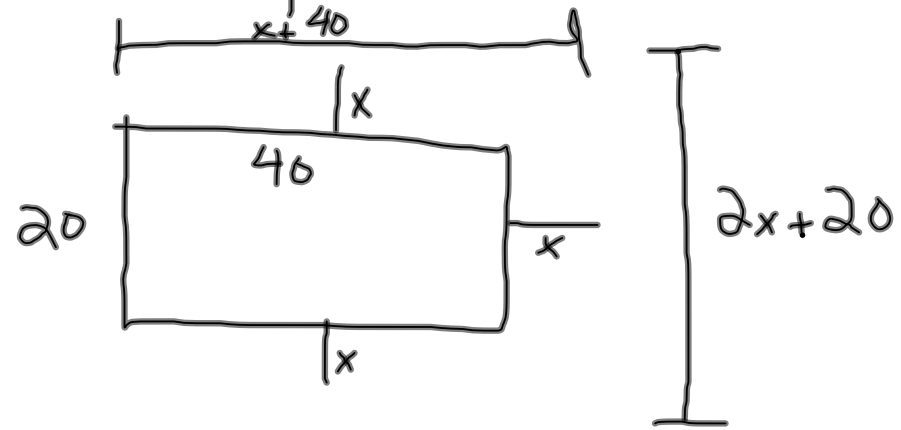
Homework Review – p. 565

(50)



$A = l \times w$

$= (x+40)(2x+20)$

$= 2x^2 + 20x + 80x + 800$

$= 2x^2 + 100x + 800$

$x = 5$

$2(5)^2 + 100 \cdot 5 + 800$

$50 + 500 + 800 = 1350 \text{ ft}^2$

(33) $p(2p-3)+(p-3)(p+3)$

$2p^2-3p+p^2+3p+-3p-9$

$3p^2-3p-9$

(18) $(5x+-8)(2x+-5)$

$10x^2+-25x+-16x+40$

$10x^2-41x+40$

Multiplying polynomials horizontally:
→ this is the technique we've used

Multiplying polynomials vertically:

$$
\begin{array}{r}
b^2 + 6b + -7 \\
\times \quad 3b + -4 \\
\hline
-4b^2 - 24b + 28 \\
3b^3 + 18b^2 - 21b + 0 \\
\hline
3b^3 + 14b^2 - 45b + 28
\end{array}
$$

$$
\begin{array}{r}
252 \\
\times \quad 27 \\
\hline
1764 \\
5040 \\
\hline
6804
\end{array}
$$

Multiply polynomials using a table:

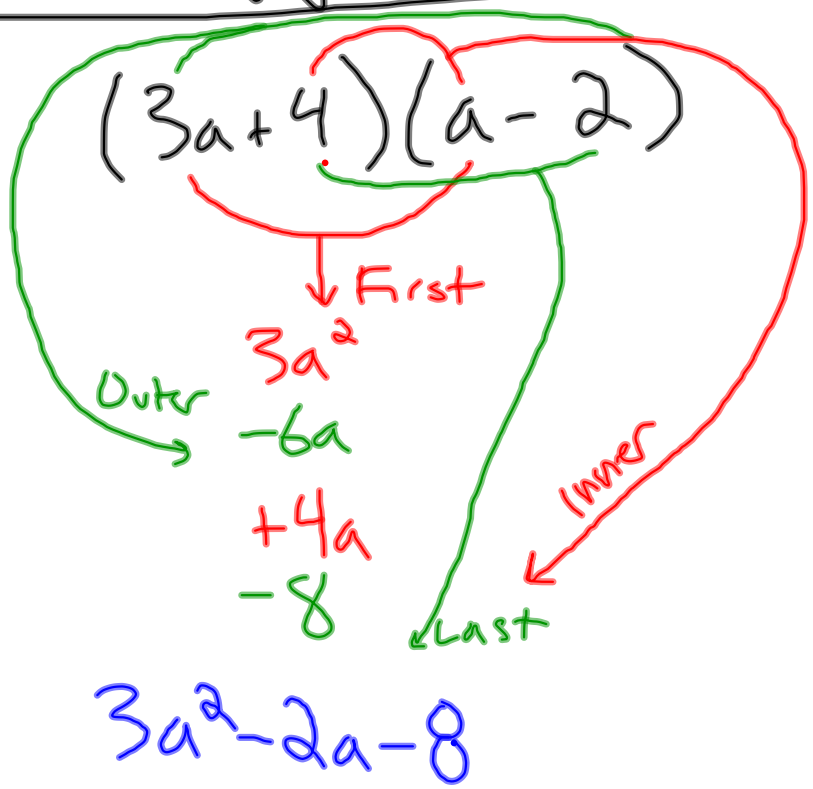
$$(x+-4)(3x^2+3x+2)$$

	$3x^2$	$3x$	2
x	$3x^3$	$3x^2$	$2x$
-4	$-12x^2$	$-12x$	-8

$$3x^3-9x^2-10x-8$$

FOIL method for multiplying two binomials

F irst
O uter
I nner
L ast



$3a^2-2a-8$

Find the product.

1. $-8y^3(2y^4 - 5y^2 + 3)$

(vertical)

$$\begin{array}{r} 2y^4 + -5y^2 + 3 \\ \times \quad\quad -8y^3 \\ \hline -16y^7 + 40y^5 - 24y^3 \end{array}$$

2. $(b + 3)(3b^2 - 2b + 1)$

(vertical, horizontal)

$$\begin{array}{r} 3b^2 + -2b + 1 \\ \times \quad\quad b + 3 \\ \hline 9b^2 - 6b + 3 \\ 3b^3 - 2b^2 + b + 0 \\ \hline 3b^3 + 7b^2 - 5b + 3 \end{array}$$

$3b^3 - 2b^2 + b + 9b^2 - 6b + 3$

$3b^3 + 7b^2 - 5b + 3$

3. $(6w + -3)(4 + -3w)$

(~~FOIL~~, table)

$24w - 18w^2 - 12 + 9w$

$-18w^2 + 33w - 12$

	$6w$	-3
4	$24w$	-12
$-3w$	$-18w^2$	$9w$

$-18w^2 + 33w - 12$

Quiz

$(x+4)(x+4)$

	x	4
x	x^2	$4x$
4	$4x$	16

$x^2+8x+16$

Square of a binomial

Square of a binomial pattern

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$(a-b)(a-b)^2 = a^2 - 2ab + b^2$$

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

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

Sum and Difference Pattern:

$$(a+b)(a-b) = a^2 - b^2$$

for binomials only!

$$a^2 - ab + ab - b^2 = a^2 - b^2$$

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

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

$$205 \times 195$$

$$(200+5) \times (200-5)$$

$$40000 - 25 = 39975$$

Find the product of the square of the binomial.

1. $(x - 9)^2$

$x^2 - 18x + 81$

2. $(m + 11)^2$

$m^2 + 22m + 121$

3. $(5s + 2)^2$

$25s^2 + 20s + 4$

Find the product of the sum and difference.

10. $(a - 9)(a + 9)$

$a^2 - 81$

11. $(z - 20)(z + 20)$

$z^2 - 400$

12. $(5r + 1)(5r - 1)$

$25r^2 - 1$

Homework:

p. 572, 4-40 even

p. 574, 1-9 odd