QUIZ!

Friday

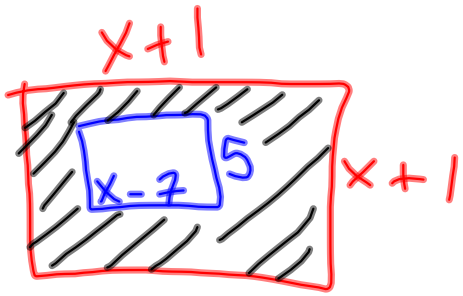
9.1 – 9.4

Homework Review-p. 565

(42) $A = (x+1)(x+1)$

$= x^2 + x + x + 1$

$= x^2 + 2x + 1$



$A = 5(x + {}^-7)$

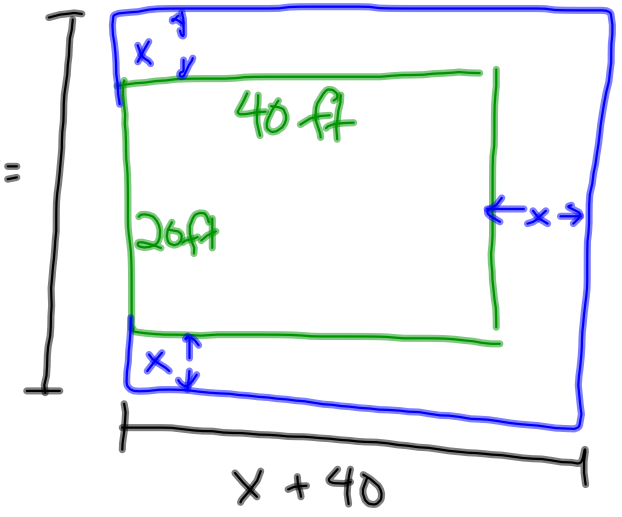
$= 5x + {}^-35$

$x^2 + 2x + 1 + {}^-(5x + {}^-35)$

$x^2 + 2x + 1 + {}^-5x + 35$

$\boxed{x^2 + {}^-3x + 36}$

(50)



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

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

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

$= 2(5^2) + 100(5) + 800$

$= 50 + 500 + 800$

$= 1350\ ft^2$

$x = 5$

multiply:

$(2x^2)(4x)$

$8x^3$

$(3x^3)(11x^3)$

$33x^6$

add:

$2x^2 + 4x$

$3x^3 + 11x^3$

$14x^3$

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

$$h^2 + 6h + -7$$
$$3h + -4$$

$-4h^2 + -24h + 28$
$3h^3 + 18h^2 + -21h + 0$
$3h^3 + 14h^2 + -45h + 28$

Use the same technique as when you multiply numbers with more than one digit:

$$\begin{array}{r} {\scriptstyle 1\,\,2} \\ 428 \\ \times\,34 \\ \hline 1712 \\ 12840 \\ \hline 14552 \end{array}$$

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

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

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

FOIL method for multiplying two binomials:

$(a+b)(x+y)$

$(3a+4)(a+-2)$

First ... $ax +$

Outer ... $ay +$

Inner ... $bx +$

Last... $by +$

$3a^2 + -6a + 4a + -8$

$3a^2 + -2a + -8$

$13w^3y^4z + 11{,}000$

Find the product.

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

$2y^4 + -5y^2 + 3$

$\quad\quad\quad\quad - 8y^3$

$-16y^7 + 40y^5 + -24y^3$

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

	$3b^2$	$-2b$	1
b	$3b^3$	$-2b^2$	b
3	$9b^2$	$-6b$	3

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

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

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

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

Square of a binomial pattern:

$$(a+b)^2 = a^2 + 2ab + b^2$$ Basic pattern:

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

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

Examples:

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

Sum and Difference Pattern (binomials only):

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

Basic pattern:

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

Why:

Examples:

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

(Works with numbers too...)

205 × 195

$(200+5)(200-5) = 40000 - 25$

$= 39975$

$32 \cdot 32$

$(30+2)(30+2) = 900 + 120 + 4$

$= 1024$

Find the product of the square of the binomial.

1. $(x + 9)^2$ $2 \times x \times 9$

$x^2 + 18x + 81$

2. $(m + 11)^2$ $2 \times m \times 11$

$m^2 + 22m + 121$

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

$25s^2 + 20s + 4$

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

$25r^2 - 1$

Pea Plants In pea plants, the gene S is for spherical seed shape, and the gene s is for wrinkled seed shape. Any gene combination with an S results in a spherical seed shape. Suppose two pea plants have the same gene combination Ss.

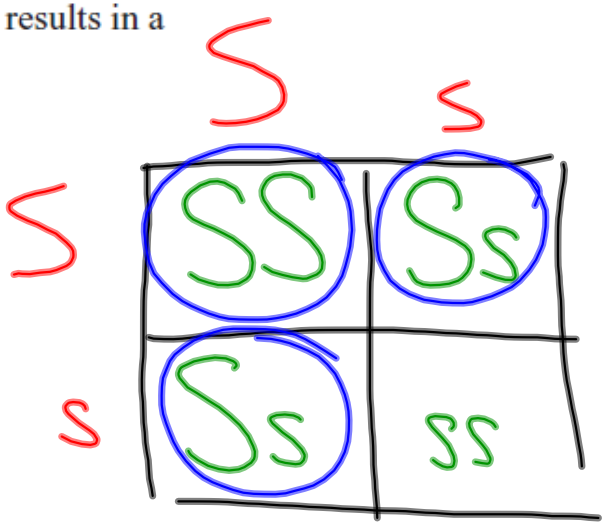
a. Make a Punnett square that shows the possible gene combinations of an offspring pea plant and the resulting seed shape.

b. Write a polynomial that models the possible gene combinations of an offspring pea plant.

c. What percent of the possible gene combinations of the offspring results in a wrinkled seed shape?

$SS + 2Ss + ss$

$3/4 = 75\%$



Homework:

p. 572, 4-40 even

p. 574, 1-9 odd