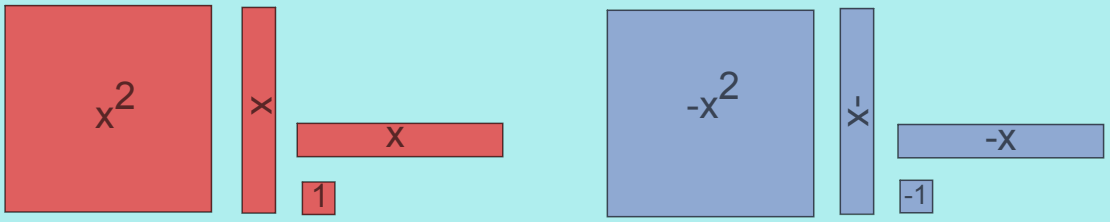
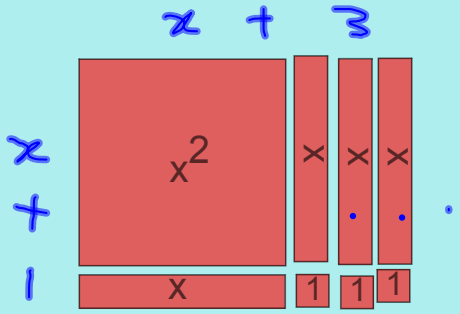
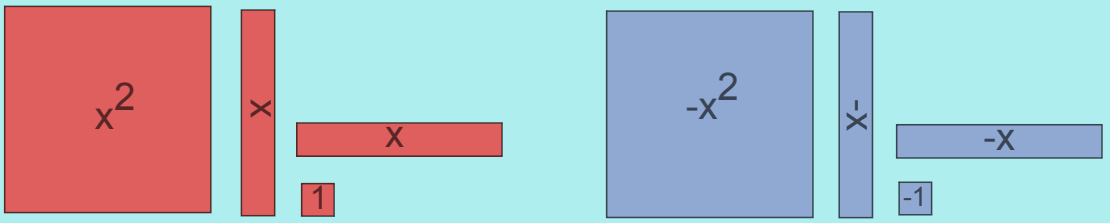


What does the area represent? $x^2 + 4x + 3$

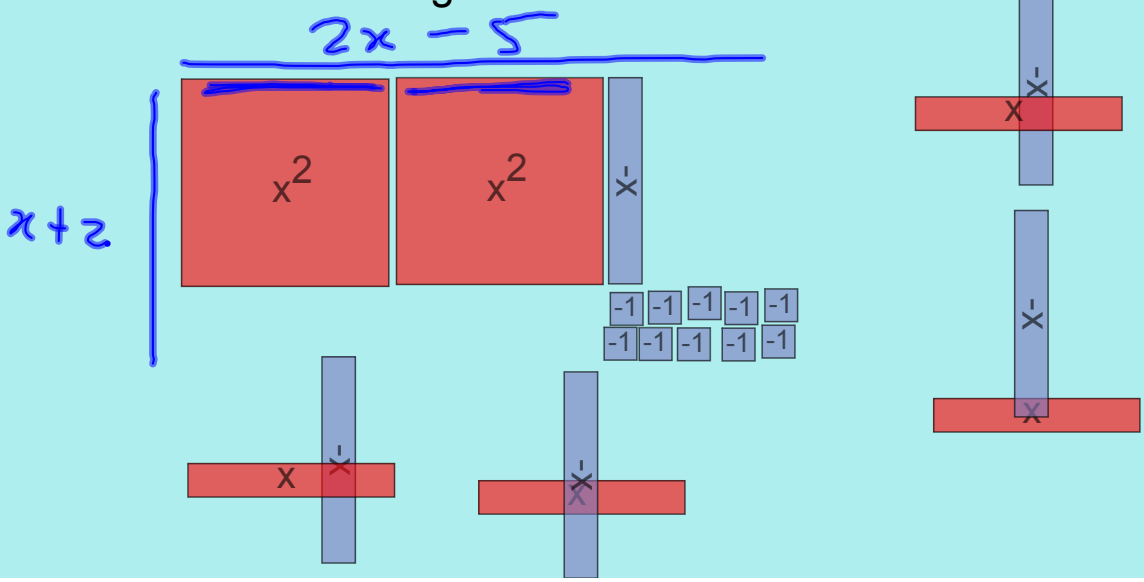
What are the side lengths? $(x+3)(x+1)$





What does the area represent? $2x^2 - x - 10$

What are the side lengths?



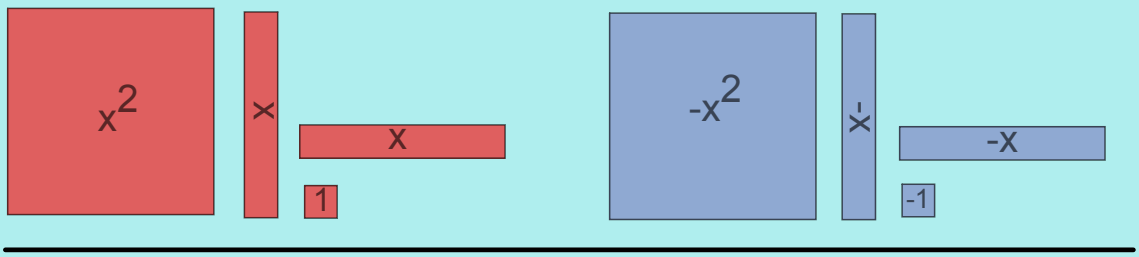
Unit 3: Expanding & Factoring

March 22/2011

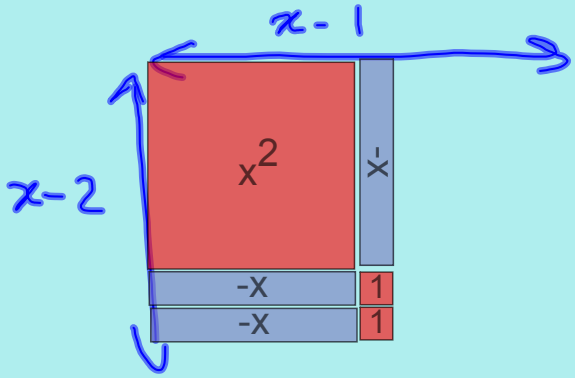
Expanding Algebraically

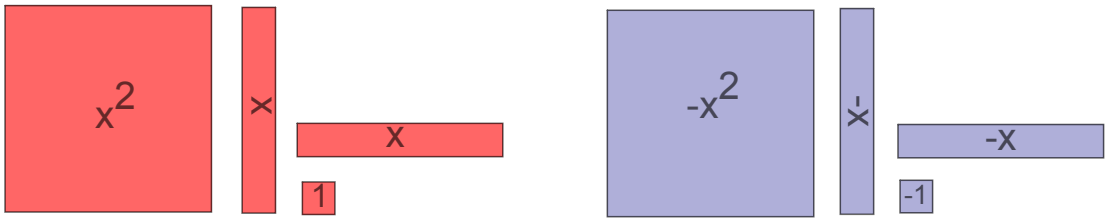
Recall: Multiplying two linear terms together forms an area.

We can often represent this multiplication using algebra tiles.

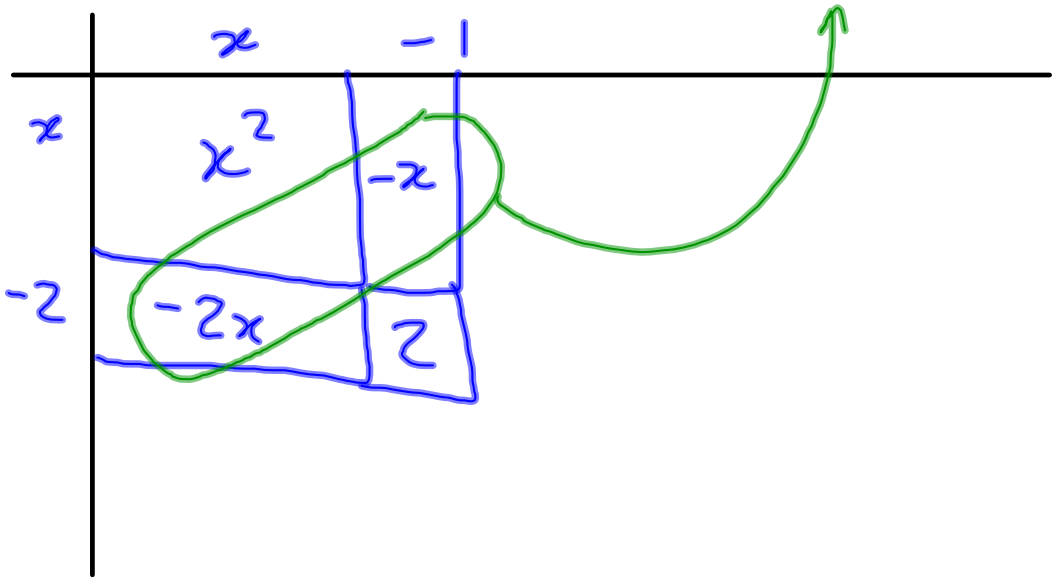


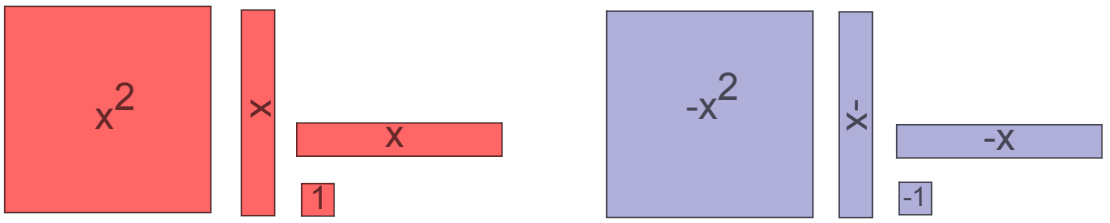
Evaluate: $(x - 1)(x - 2)$ $= x^2 - 3x + 2$



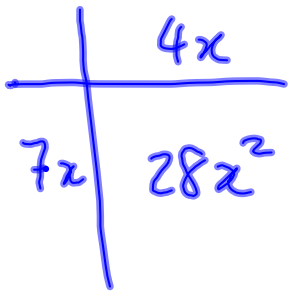


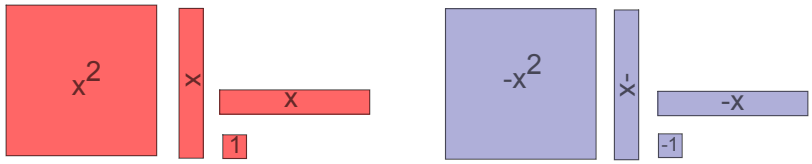
Ex.1 Evaluate: (x - 1)(x - 2) $= x^2 - 3x + 2$



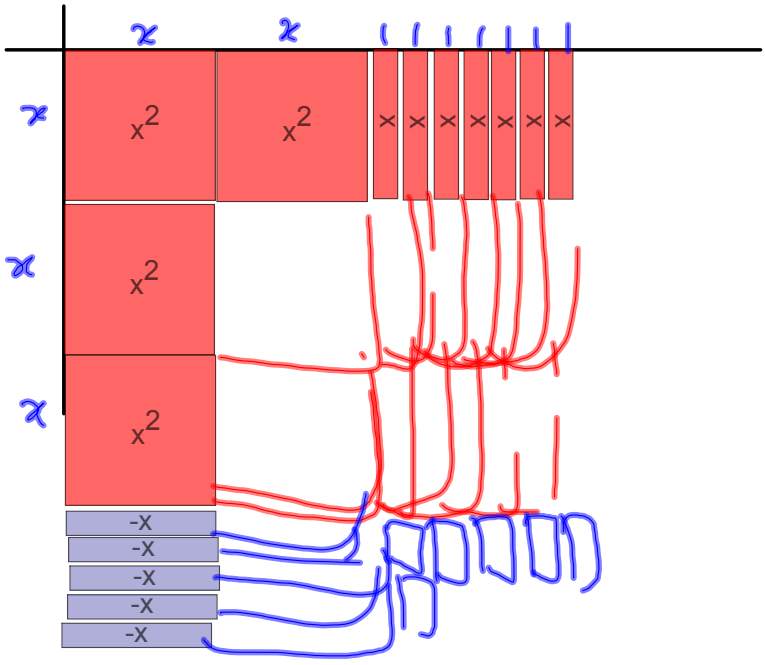


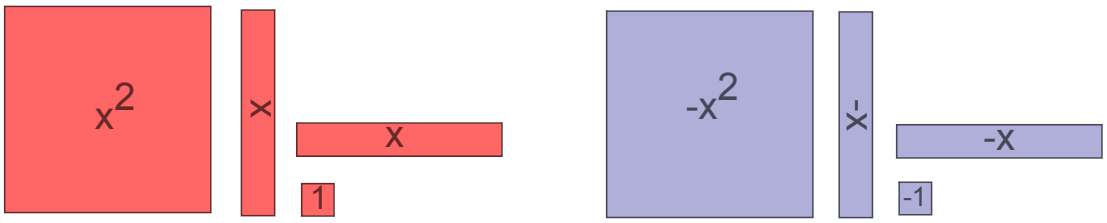
Evaluate: (4x)(7x) $= 28x^2$



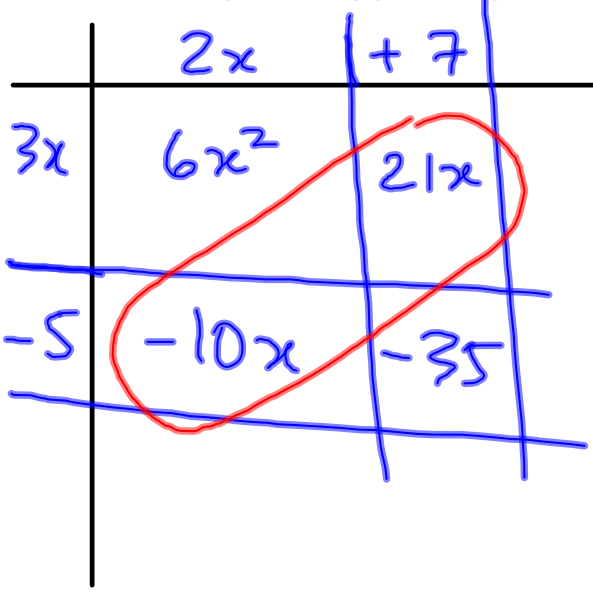


Evaluate: (2x + 7)(3x - 5)





Evaluate: (2x + 7)(3x - 5) $= 6x^2 + 11x - 35$



Definitions:

1. Monomial - an expression with a single term

$3x$ or 7 or $5xy$ or a^2bc^3

2. Binomial - an expression with two terms

$(2x + 5)$ or $(a + 2b)$ or $(m^2 - pq)$

What is a term? numbers and/or variables combined using multiplication or division

3. Trinomial - an expression with three terms

$x^2 + 5x + 6$ or $2xy + a + 5$

4. Polynomial - an expression with any number of terms.

Distributive Property:

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

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

$= 6x^2 - 8x$

(b) $(2x + 3)(5x + 2)$

$= 2x(5x+2) + 3(5x+2)$

$= 10x^2 + 4x + 15x + 6$

$= 10x^2 + 19x + 6$

FOIL (First-Outer-Inner-Last)

(a) $(3x - 5)(2x + 7)$

F O I L

$= 6x^2 + 21x - 10x - 35$

$= 6x^2 + 11x - 35$

	$3x$	-5
$2x$	$6x^2$	$-10x$
$+7$	$21x$	-35

Assigned Work:

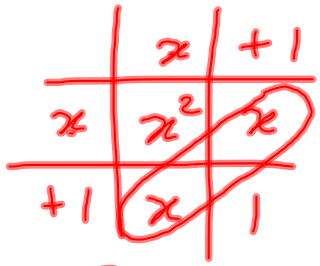
p.166-167 # 3 - 5 (odd)
8 - 10 (odd)

9(c) $6x(x+1)^2$

$= 6x(x+1)(x+1)$

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

$= 6x^3+12x^2+6x$



x^2+2x+1

$(x+1)(x+1)$

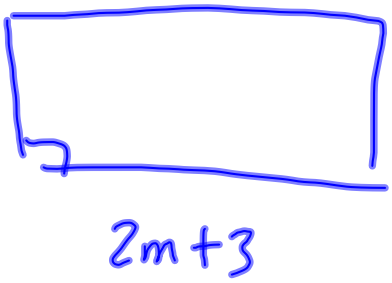
$= x^2+x+x+1$

$= x^2+2x+1$

$6x \cdot x^2$

$= 6x \cdot x \cdot x$

8 (a)



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

$= 8m^2 + 4m - 12$

	$2m$	$+3$
$4m$	$8m^2$	$12m$
-4	$-8m$	-12