Burger Shack

http://www.youtube.com/watch?v=SkcbhPYk_rU

How would you remember this order

4 cokes
3 hamburgers
2 chicken
5 fries

How would you find the total cost? What info do you need?

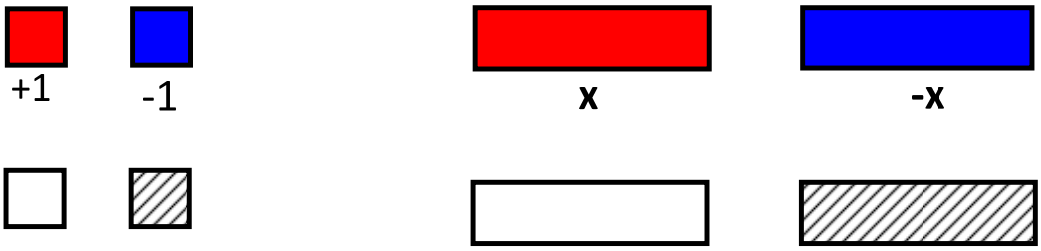
What method did you use to find the total cost?

4 cokes → 4(1.75)
3 hamburgers → 3(4.00) +
2 chicken → 2(3.50) +
5 fries → 5(2.25)

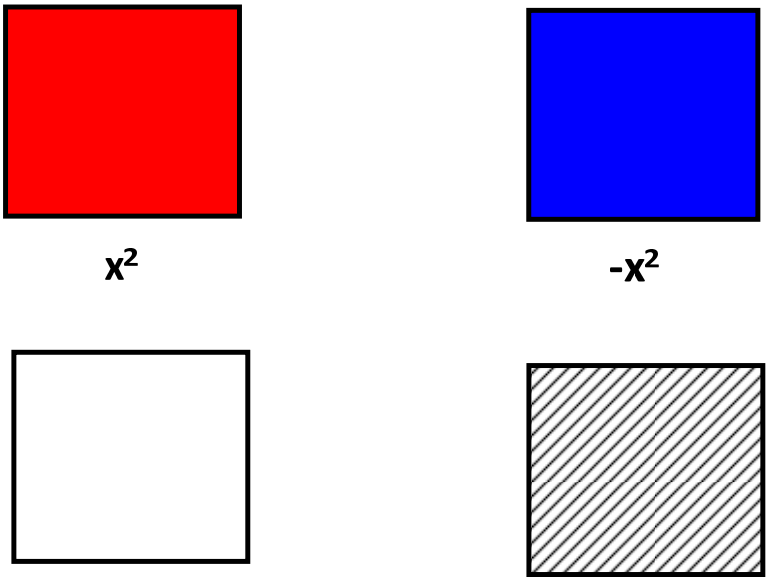
2.1 Algebraic Expressions

Using Tiles to Model

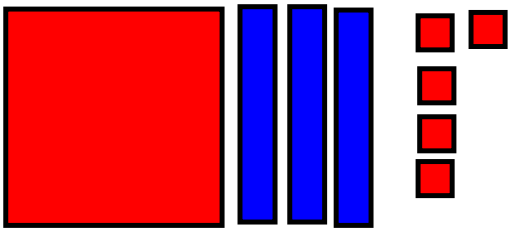
1-Dimensional Models: used as counters/adding



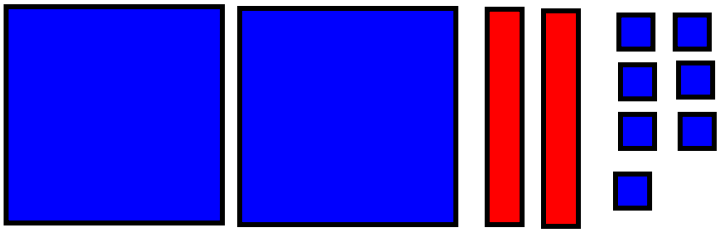
2-Dimensional Models: used to represent area/multiplication



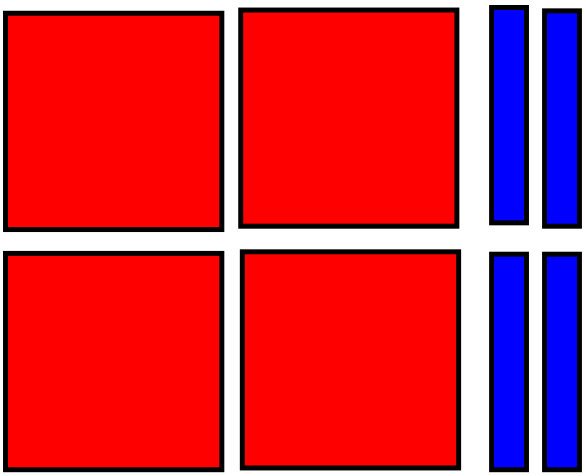
Ex.1 Write the algebraic expression represented by each model.



$= x^2 - 3x + 5$



$= -2x^2 + 2x - 7$

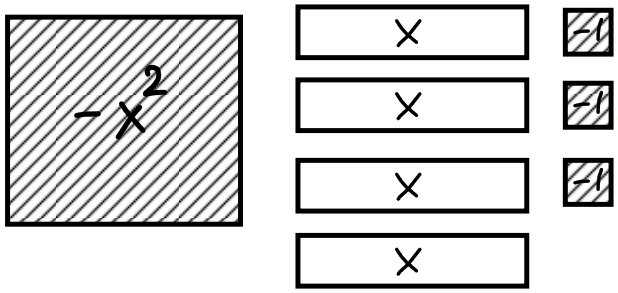


$= 4x^2 - 4x$

Ex. 2 Express the following polynomials with tiles.

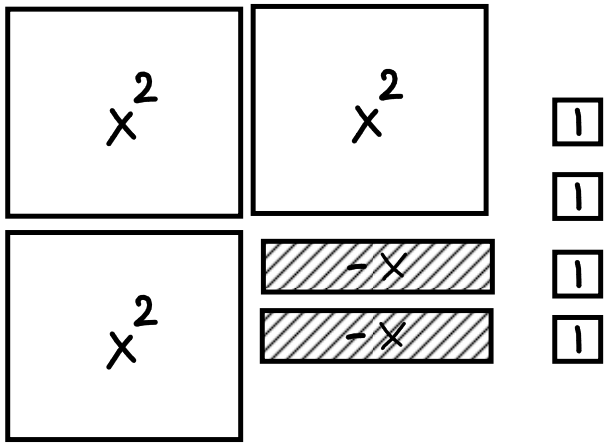
a) $-x^2 + 4x - 3$

PULL



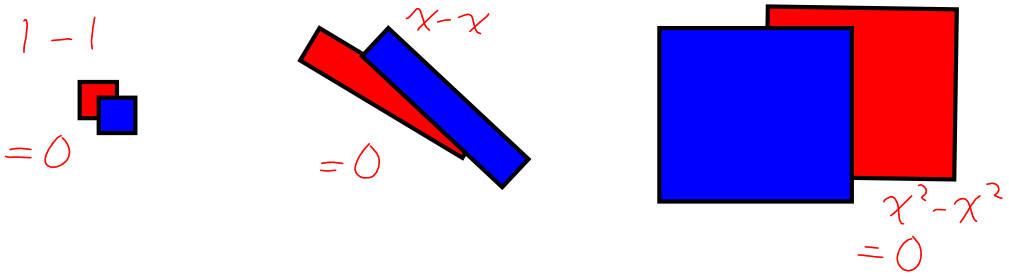
b) $3x^2 - 2x + 4$

PULL



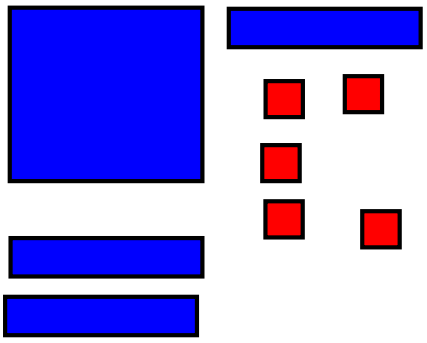
Like Terms

Explain why each of the following groupings is equal to zero.



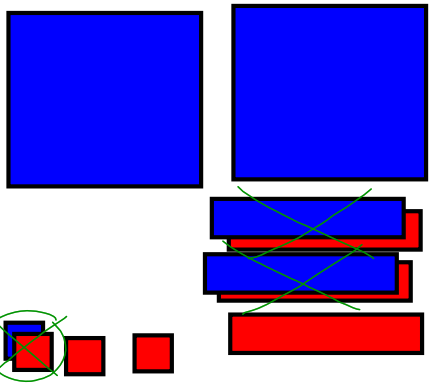
Ex. 3 Write an algebraic expression to represent the model shown.

a)



$= -x^2 - 3x + 5$

b)

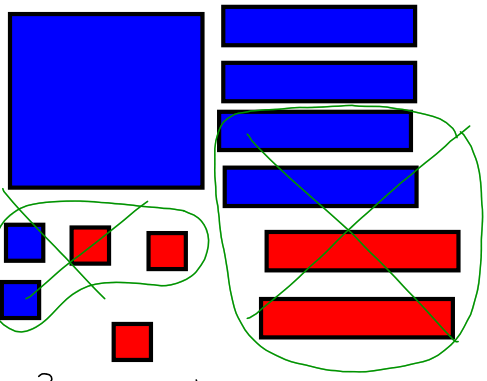


$= -2x^2 - 2x + 3x - 1 + 3$

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

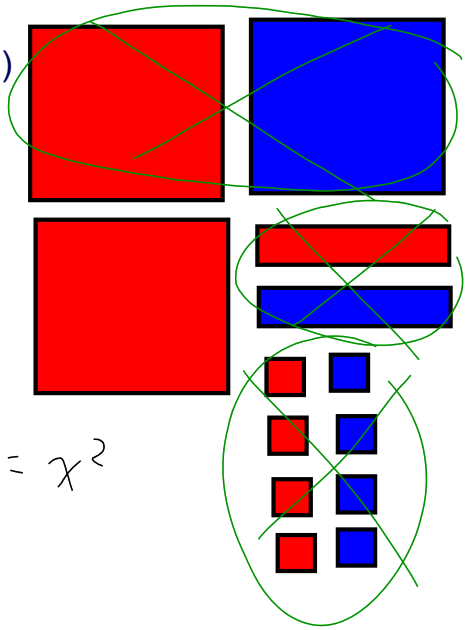
(C) $= -2x^2 + x + 2$

c)



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

d)



$= x^2$

Like Terms:

Terms that have the same variables with the same exponents.

Ex. 4 State if the terms are like or unlike.

a) 5x; -10x; $\frac{x}{4}$ → $\frac{1}{4}x$ like

b) 6ab; -7ba; ab like

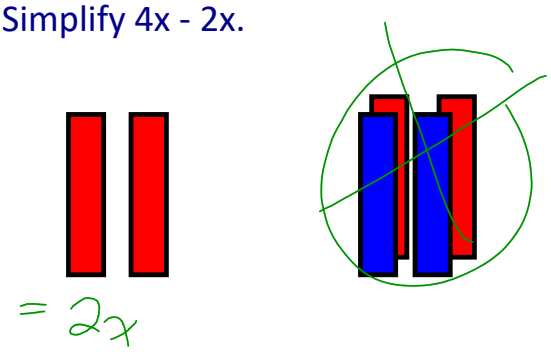
c) 10a; 10b unlike

d) 6ab; 7a unlike

e) $10a^2bc^3$; $-2ba^2c^3$ like

f) $5a^2b$; $3b^2a$ unlike

Ex. 5 Simplify 4x - 2x.



$= 2x$

Ex. 6 Simplify each expression by collecting like terms.

a) 3x + 2 - 4x +1

$= 3x - 4x + 2 + 1$

$= -1x + 3$

$= -x + 3$

b) 7a + 3b - 2b + 5x

$= 7a + b + 5x$

c) 5x + (-3) - (-2x) + 1

$= 5x - 3 + 2x + 1$

$= 5x + 2x - 3 + 1$

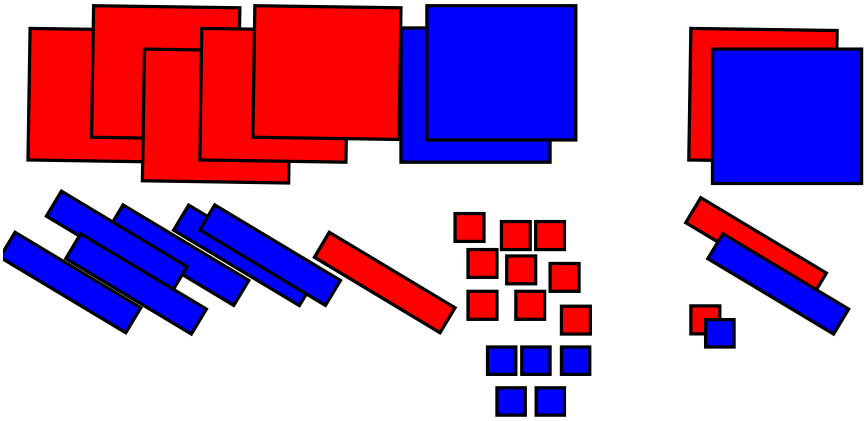
$= 7x - 2$

d) 3w - (-7) - (+1) + (-3w)

$= 3w + 7 - 1 - 3w$

$= 6$

Ex. 7 Dylan reaches into a bag of algebra tiles and pulls out a number of blue and red tiles. Simplified, his tiles represent the trinomial $3x^2 - 5x + 4$. What combination of tiles could Dylan have pulled out?



Ex. 8 Create an algebraic expression to represent each of the following.

a) a number is doubled then increased by 7 $2x+7$

b) the variable w is squared and then 5 is subtracted from it w^2-5

c) the variable k is increased by 9 then divided by 2 _____

NOT → $k+9\div 2$ $\frac{k+9}{2}$ or $(k+9)\div 2$

Ex. 9 Evaluate each expression for the given value of the variable.

a) $3-5x$ *for* $x=-1$

$= 3-5(-1)$

$= 3+5$

$= 8$

b) $3m^2-2m+1$ *for* $m=-2$

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

$= 3(4)-(-4)+1$

$= 12+4+1$

$= 17$