Lesson 4.1.1 and 4.1.2 Assignment

Name: **Date:** **Period:**

4-6. Multiply the expressions below using an area model. Homework Help ✎

a. (2x-3)(4x+1)	b. $(4x - 8)^2$

4-7. Write the area of the rectangle below as a sum and as a product. Homework Help ✎

$-1x$	$-3y$	5
$2x^2$	$6xy$	$-10x$

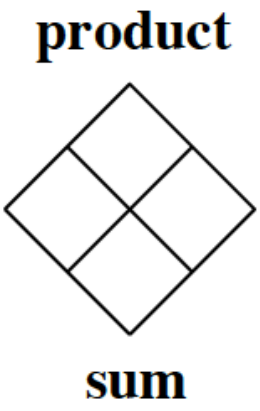
4-8. Previously, you have used the Distributive Property and common factors to change expressions written as sums into expressions written as products. For example:
The sum 12x+18 may be rewritten as the product 6(2x+3) because 6 is a common factor of both terms of the original expression. Since x is a common factor of every term in the sum

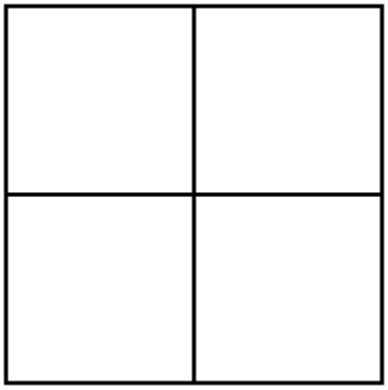
x^2 + xy + x, the expression may be rewritten as the product x(x+y+1). Use the greatest common factor to rewrite each sum as a product. Homework Help ✎

a. 4x+8
b. 10x + 25y + 5
c. $2x^2 - 8x$
d. $9x^2 + 12x + 3xy$

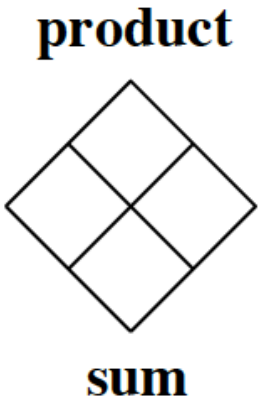
4-16. Use a Diamond Problem to factor the expressions below. Homework Help ✎

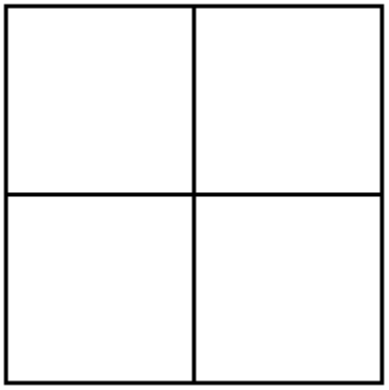
a. $x^2 - 4x - 12$



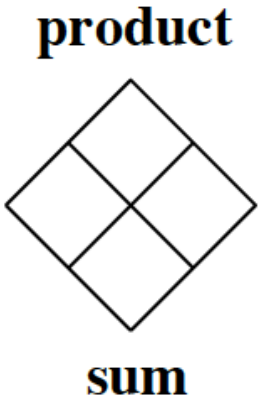


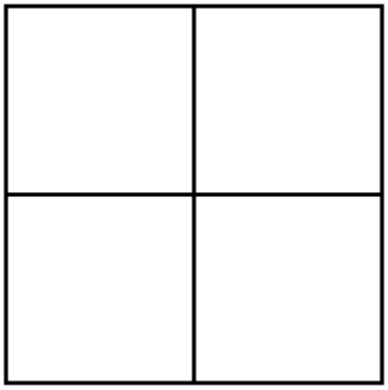
b. $4x^2 + 4x + 1$



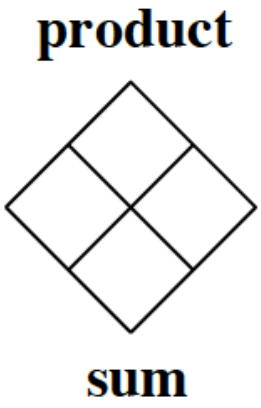


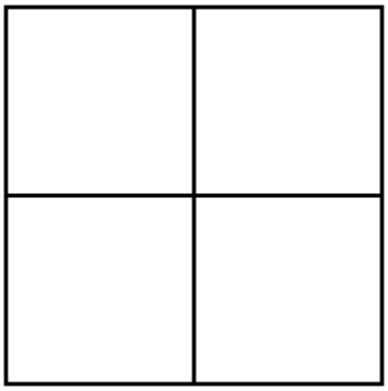
c. $2x^2 - 9x - 5$





d. $3x^2 + 10x - 8$





4-20.

Complete the table below for the function $y = x^2$. Homework Help ✎

x	-4	-3	-2	-1	$-\frac{1}{2}$	0	$\frac{1}{2}$	1	2	3	4
y											

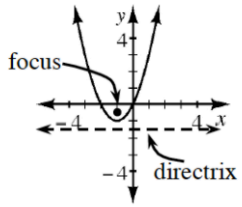
a. Sketch a graph of the function. (Feel free to use desmos graphing calculator)

b. This graph is an example of a **parabola**. The **vertex** is the maximum or minimum point of a parabola. Where is the vertex of the parabola you graphed in part (a)?

parabola ×

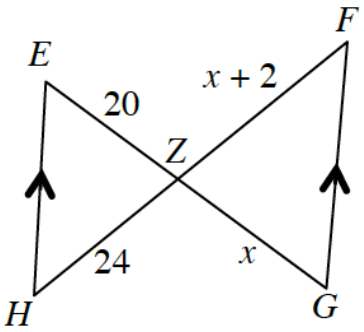
A parabola is a conic section created by slicing a cone with a plane parallel to a lateral edge of the cone. Parabolas are most commonly seen in algebra courses as the graphs of quadratic equations. Two commonly used forms of quadratic equations are standard form $y = ax^2 + bx + c$ and graphing form $y = a(x - h)^2 + k$, with the vertex of the parabola at (h, k).

A parabola is also described as the set of all points that are equidistant from a single point (the focus) and a line (the directrix).



4-22. Examine the triangles in the diagram at right. Homework Help ✎

a. Are the triangles similar? If you decide that they are, then justify your conclusion using a flowchart.



b. Solve for x. Show all work.