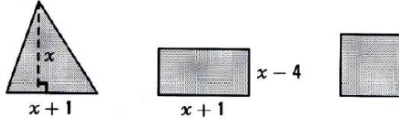


## Review for Sit Prob:

1. The triangle, rectangle and square below are equivalent. **What is the numerical value of the square's perimeter?**



2. A chocolate maker produces bite-sized chocolates in two different shapes: balls and hearts. All the chocolates of the same shape are congruent and have the same mass.

The chocolate maker packages the chocolates in bags of different sizes.

A 128-gram bag holds 8 balls and 5 hearts.

A 261-gram bag holds 18 balls and 9 hearts.

The chocolate maker puts 10 balls in a third bag. He wants to add enough hearts to bring the mass of the bag to 325 grams.

**How many hearts does the chocolate maker need to add to the third bag?**

3. A merchant sells baskets of peppers and baskets of zucchini.

The cost of each basket of peppers is the same. The cost of each basket of zucchini is the same.

The table below provides information on the purchases made by three customers.

Customer	Number of baskets of peppers	Number of baskets of zucchini	Total cost
Leah	5	4	\$35.25
Mario	8	5	\$49.75
Pascal	9	6	?

**What is the total cost of the baskets that Pascal bought?**

4. Determine the equation of the second-degree function associated with the description provided.
- The vertex is located at  $V(3, 2)$  and the graph passes through the point  $P(4, 3)$ .
  - The two zeros are  $-3$  and  $1$  and  $f(-1) = 2$ .
  - The equation of the axis of symmetry is  $x = -1$ . The maximum is  $2$  and the graph passes through the point  $P(4, -123)$ .
  - The only zero of the function is  $-2$  and  $f(-1) = -1$ .

1.

The triangle, rectangle and square below are **equivalent**. What is the numerical value of the square's perimeter?

$x(x+1) = (x+1)(x-4)$   
 $x^2 + x = x^2 - 3x - 4$   
 $x^2 + x - x^2 + 3x = -4 - 4$   
 $4x = -8$   
 $x = -2$

$0 = x^2 - 7x - 8$   
 $0 = (x-8)(x+1)$   
 $x = 8$  or  $x = -1$

$A_{\square} = x^2$   
 $36 = x^2$   
 $6 = x$   
 $P = 4(6)$   
 $P = 24$

The trapezoid and square below are **equivalent**. What is the numerical value of the trapezoid's perimeter?

2.

$x = \text{mass of a choco ball shape (g)}$   
 $y = \text{mass of a heart shape (g)}$

$17(8x + 5y = 128)$   
 $-8(18x + 9y = 361)$

$144x + 90y = 2304$   
 $-144x - 72y = -2078$   
 $+18y = 226$   
 $y = 12.56$  heart shape

$8x + 5(12.56) = 128$   
 $8x + 62.8 = 128 - 62.8$   
 $8x = 65.2$   
 $x = 8.15$  ball shape

3<sup>rd</sup> bag:

$10(8.15) + ?(12.56) = 325$   
 $81.5 + ?(12.56) = 325 - 81.5$   
 $?(12.56) = 243.5$   
 $? = 19.3$  hearts

3.

$x = \text{cost of basket of peppers}$   
 $y = \text{cost of basket of zucchini}$

$8(5x + 4y = 35.25)$   
 $-5(8x + 5y = 49.75)$

$40x + 32y = 282$   
 $-40x - 25y = -248.75$   
 $7y = 33.25$   
 $y = 4.75$  (peppers)

$5x + 4(4.75) = 35.25$   
 $5x + 19 = 35.25$   
 $5x = 16.25$   
 $x = 3.25$  (zucchini)

Pascal

$9(3.25) + 6(4.75)$   
 $29.25 + 28.5$   
 $57.75$

4.

a)  $f(x) = (x-3)^2 + 2$

b)  $f(x) = -\frac{1}{2}(x+3)(x-1)$

c)  $f(x) = -5(x+1)^2 + 2$

d)  $f(x) = -(x+2)^2$

or  $f(x) = -1(x+2)(x+2)$