

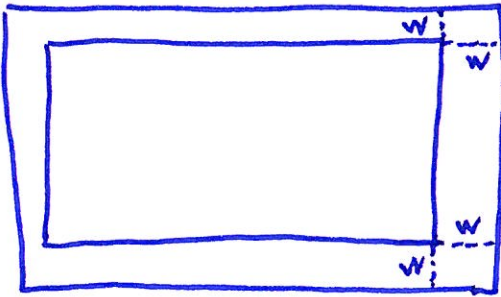
*AAT

Chapter 6: Problem Solving Tasks #1-4 (IC)

Name: Key
Date: _____ Period: _____

Task #1:

An Olympic-size swimming pool measures 25 meters by 50 meters. The Harrison City Recreation Department is planning to construct a new pool that will be bordered with a walkway of a uniform width w . Find the possible widths of the walkway if the total area of the walkway is to be greater than 76 square meters, but no more than 400 square meters.



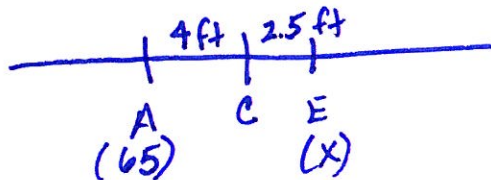
$$4w^2 + 150w > 76$$
$$4w^2 + 150w - 76 > 0$$
$$w > .5m \quad \text{--- or ---}$$

$$4w^2 + 150w < 400$$
$$4w^2 + 150w - 400 < 0$$
$$w < 2.5m$$

$$76 < (25+2w)(50+2w) - 25(50) < 400$$
$$76 < 1250 + 150w + 4w^2 - 1250 < 400$$

Task #2:

1. Eric and his little sister Amber enjoy playing on the seesaw at the playground. Amber weighs 65 pounds. Eric and Amber balance perfectly when Amber sits about 4 feet from the center and Eric sits about 2 1/2 feet from the center. About how much does Eric weigh?



$$65(4) = x(2.5)$$
$$x = 104 \text{ lb.}$$

2. Their little cousin Aleah joins them and sits with Amber. Can Eric balance the seesaw with both Amber and Aleah on one side if Aleah weighs about the same as Amber? If so, where should he sit? If not, why not?

$$130(4) = 104(x)$$

$x = 5$ ft. from center (if seesaw is long enough)

$$\begin{array}{r} 65 \\ + 2 \\ \hline 130 \end{array}$$

Task #3:

This year, Zachary has been babysitting his young cousins after school for \$70 a month. His uncle also gave him an extra bonus of \$100 for his excellent work. Since school started, Zachary has earned more than \$500. How many months ago did school start? Write an inequality that represents this situation. Solve it showing all your work.

$$70m + 100 > 500$$

$$\frac{70m}{70} > \frac{400}{70}$$

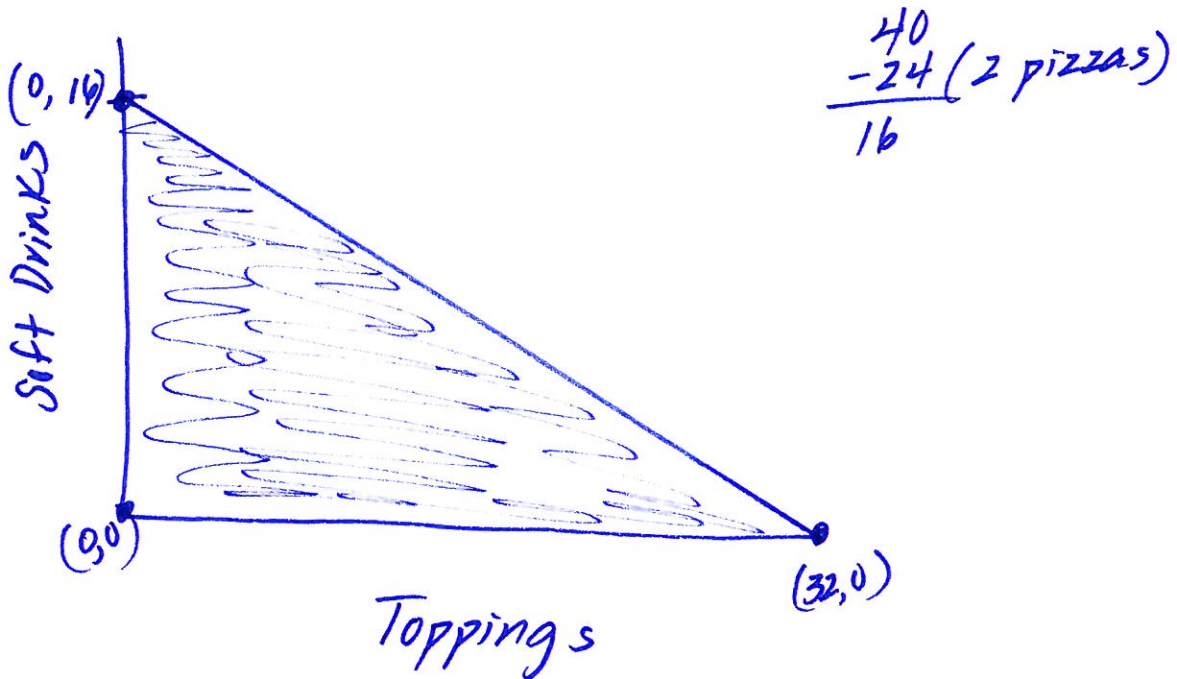
$$m > 5.7$$

6 months ago

Task #4:

You and a group of friends are planning to order two large pizzas and some soft drinks. Each pizza costs \$12.00. Each extra topping costs \$0.50, and each soft drink costs \$1.00. You have a total of \$40.00 to spend.

Represent this situation as a feasible region on a graph, and indicate the corner points of the region and its boundaries.



$$.5t + 1d \leq 16$$

$$t \geq 0$$

$$d \geq 0$$