

MY DREAM STORE

Owned by:

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Name of store:

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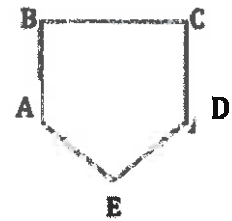
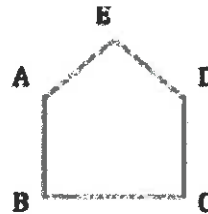
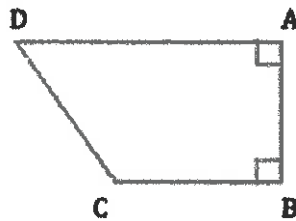
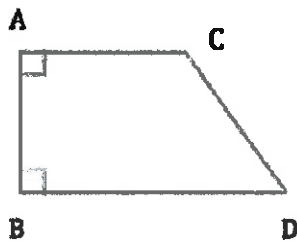
Item to be sold:

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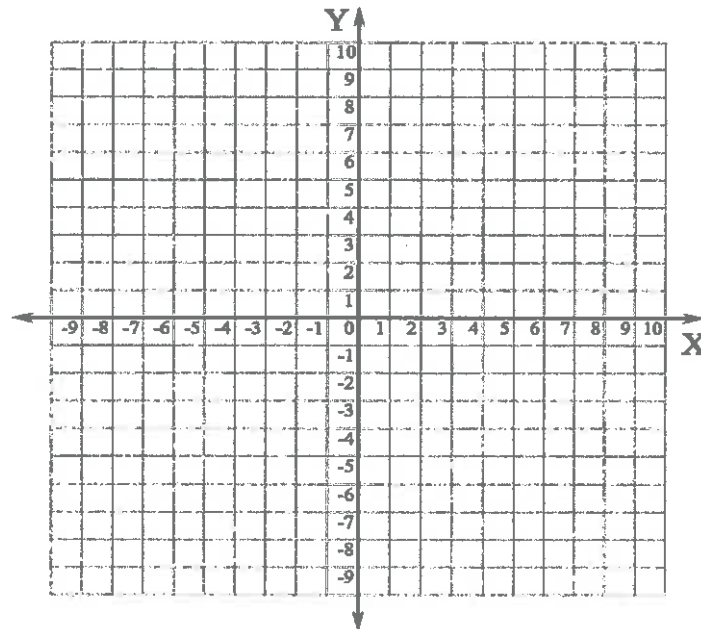
# PART I

What does your store look like?

1) Choose a floor plan by circling one of the four below:



2) Graph the floor plan you chose above on the coordinate plane below. Make it overlap into at least 2 quadrants. Label all points and write their coordinates  $(x, y)$ .



3) Without counting boxes, how can you find the distance between points A and B using only their coordinates?

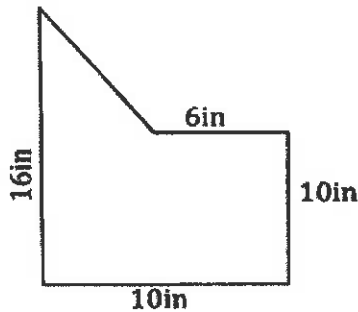
# PART I

What does your store look like?

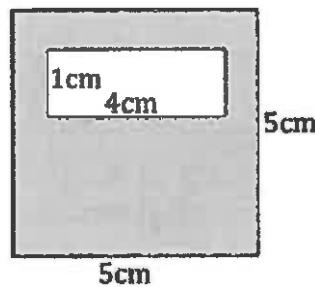
4) Find the AREA of your store by composing it into rectangles and triangles Use the FORMULAS for area of a rectangle and triangle. Show all work.

## Practice

1) Determine the area of the following figure.



2) Determine the area of the shaded part.



# PART 2

Let's make some \$\$\$

1) Choose how much money you will sell your item for (\$0.25 - \$100) : \_\_\_\_\_

2) Complete the table below that compares the quantity of your item to the total cost.

X = quantity  
Y = total cost

X	Y -
1	
2	
3	
4	
10	

Equation: \_\_\_\_\_

3) Which variable is the INDEPENDENT variable? \_\_\_\_\_

Which variable is the DEPENDENT variable? \_\_\_\_\_

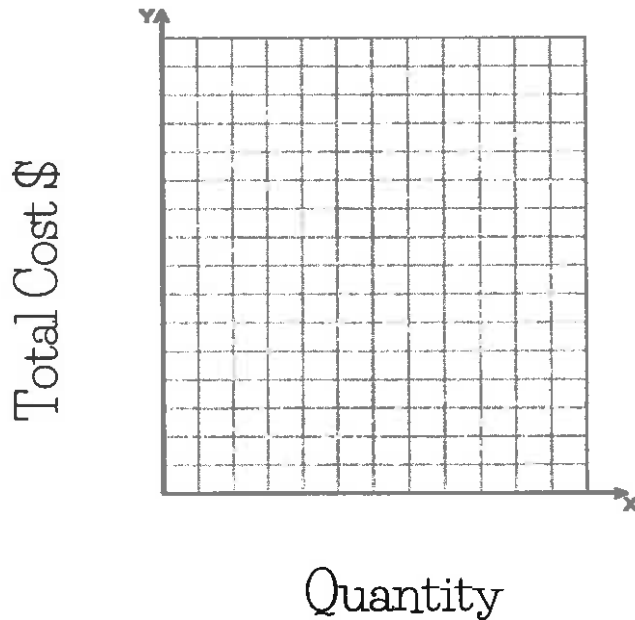
Explain how you know this.

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# PART 2

Let's make some \$\$\$

4) Graph the table you created in problem #2.



## Practice

1) Solve the following equations for the variable  $x$ .

a)  $12 = 4 + x$

b)  $\frac{2}{3}x = \frac{6}{7}$

c)  $\frac{3}{4}x = 75$

2) Simplify the following expressions:

a)  $z + 3y + 10z + 8y - 2z$

b)  $3(x + 9) - 4$

c)  $3(2)^4 + (5 - 2)^2$

**PART 3**

What if...?

- 1) You have sold 800 of your item so far this month. By the end of the month, you would like to have sold a minimum of 1,000 items. Using a variable, write an **INEQUALITY** to represent how many more items you need to sell.

Inequality: -----

- 2) Before your opened your store, you had \$2,000 in the bank. Using a variable, write an **INEQUALITY** to represent how many items you must sell to have at least \$3,000.

Inequality: -----

- 3) Last week was a slow week due to bad weather. You sold fewer than 12 items. Using a variable, write an **INEQUALITY** to represent this and graph it on the number line.

Inequality: ----- Graph: 

**PART 3**

What if...?

**Practice**

1) Which of the following values is a solution of  $3x \geq 12.6$ ?

4, 4.2, 3, 10

2) Solve and graph the following inequalities:

a)  $5x > 20$



b)  $10 + a < 13$



c)  $x - 7 \geq 1$

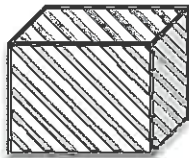


# PART 4

## Packaging your item

1) Choose the dimensions of the boxes you will use to package your item for shipping. You must include at least one mixed number for each box. Then, find the VOLUME of each.

### Small Box



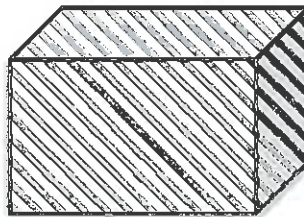
Length =

Width =

Height =

Volume =

### Large Box



Length =

Width =

Height =

Volume =

2) What is the difference between the volume of the large box and the volume of the small box?



# PART 4

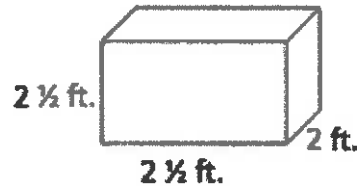
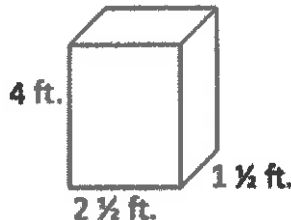
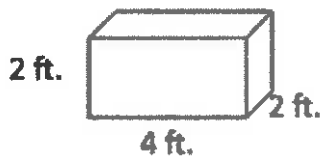
## Packaging your item

3) Suppose you want the volume of your small box to be exactly 60 cubic inches. If the width is 10 inches and the length is 3 inches, what must the height be?

4) Suppose you want the volume of your large box to be exactly 2312.4 cubic inches. If the length is 20.5 inches, and the height is 12 inches, what must the width be?

### Practice

Three shipping boxes have different volumes and need to be labeled SMALL, MEDIUM, and LARGE based on their volumes. Determine the volumes in order to correctly label the boxes SMALL, MEDIUM, and LARGE.



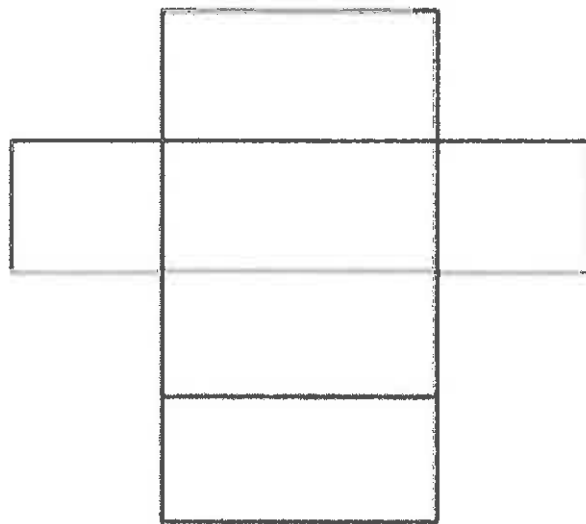
# PART 5

Bubble wrap your item!!



In order to ship your package, you must wrap it in bubble wrap. You want to know EXACTLY how much wrap you will need to ship your SMALL package.

1) Label the net of your small package with your dimensions.



2) Find the surface area of your small package

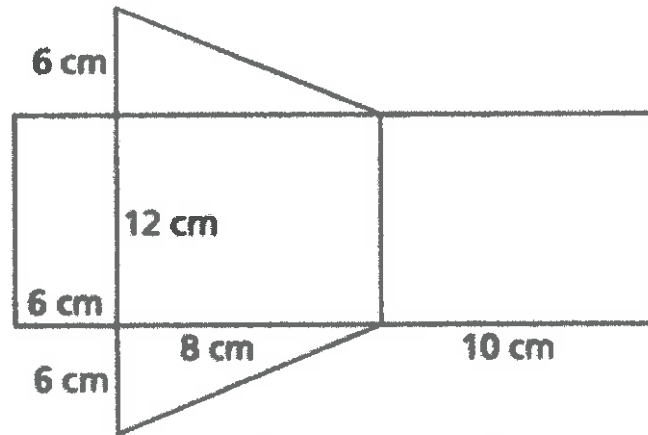
# PART 5

Bubble wrap your item!!



## Practice

The diagram below represents the net of a triangular prism.



[not drawn to scale]

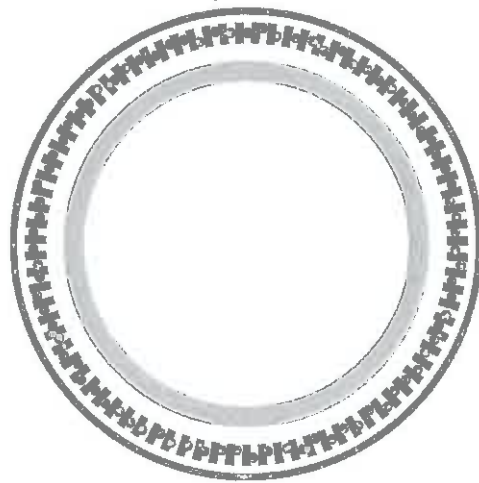
What is the surface area of the triangular prism?

# PART 6

## SALE DAY!!

Your store is having a huge sale! Everyone that walks in the door gets a coupon for a percentage off his or her total cost.

- 1) Design your coupon below. Make sure to include the PERCENT DISCOUNT you are giving your customers.



- 2) Mary's total (before coupon) came to \$72. If she uses the coupon, how much money will be discounted? What will her new total be?

# PART 6

## SALE DAY!!

- 3) John bought 5 of your item. How much money will be discounted if he uses the coupon? What will his total cost be?
  
- 4) Alesha's discount came to \$4.25. What was her total cost before using your coupon?
  
- 5) How much money will a customer pay for a total that came to \$100 if there is an 8% tax AND he or she uses your coupon?

# PART 6

## SALE DAY!!

### Practice

1) On the first math test, Keiko answered 19 out of 25 questions correctly. On the second test she got 17 out of 20 correct. On which test did she get a better grade? Show all work to justify your answer

2) At Madison Middle School, 60% of the 800 students participate in music. How many students participate in music?

3) Christian turned in his third book report. His teacher said that Christian had completed 20% of the reports for the school year. How many research reports will he do during the school year?

# PART 7

## Reflection

Reflect on all the steps it took to start your dream store. How would you answer the question, "How is math used in real life?"

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Is there anything you would add or change about this project? Be specific.

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What aspect of this project, if any, was difficult?

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# DREAM STORE GRADING RUBRIC

NAMES \_\_\_\_\_

- 4: All work completed with little to no errors. Student displays strong understanding.
- 3: Most or all work completed but with some errors. Student displays some understanding.
- 2: Some work completed but with many errors. Student does not display strong understanding.
- 1: Little or no work completed and with many errors. Student does not display strong understanding.

PART 1	YOUR STORE  1 2 3 4	PRACTICE PROBLEM(S)  1 2 3 4
PART 2	YOUR STORE  1 2 3 4	PRACTICE PROBLEM(S)  1 2 3 4
PART 3	YOUR STORE  1 2 3 4	PRACTICE PROBLEM(S)  1 2 3 4
PART 4	YOUR STORE  1 2 3 4	PRACTICE PROBLEM(S)  1 2 3 4
PART 5	YOUR STORE  1 2 3 4	PRACTICE PROBLEM(S)  1 2 3 4
PART 6	YOUR STORE  1 2 3 4	PRACTICE PROBLEM(S)  1 2 3 4
PART 7	Completed Responses  1 2 3	

Final Grade: