

## Pre-Algebra DSPA – General Guidelines

The district assessments in this booklet will be given following these guidelines:

- MA-PA-01 Integer Operations and Graphing Linear Equations** – To be given after completion of Chapter 2 in FFA 2 (No Calculator)
- MA-PA-02 Data Analysis and Probability** – To be given after completion of Chapter 3 in FFA 2 (Calculators OK)
- MA-PA-03 Algebraic Expressions and Solving Equations** – To be given after completion of Chapter 5 in FFA 2. (Calculators OK)
- MA-PA-04 Area, Perimeter, and Proportional Reasoning** – To be given after completion of Chapter 6 in FFA 2. (Calculators OK)
- MA-PA-05 Pythagorean Theorem, Surface Area, and Volume** – To be given after completion of Chapter 8 in FFA 2. (Calculators OK)

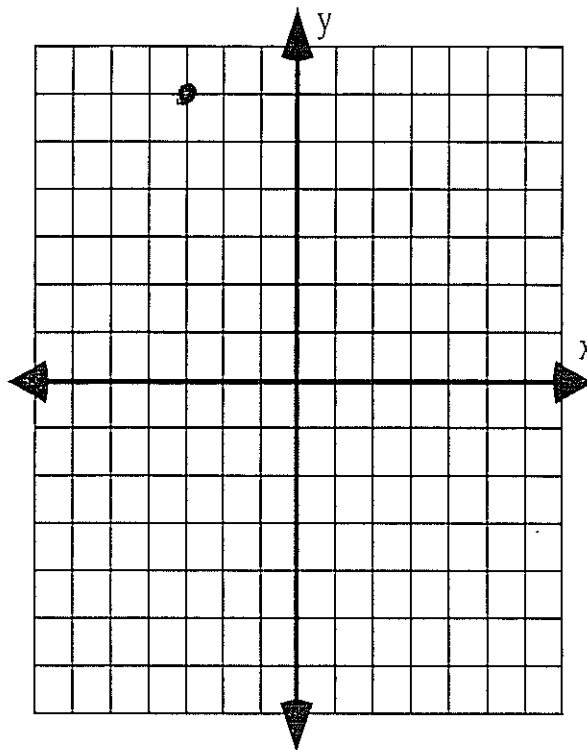
Enter the percent score for each student in Power Grade after each assessment.

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

Pre-Algebra DSPA – MA-PA-01

1. (20 pts.) Complete the table below and plot the points on the grid.

x	$y = -2 \cdot x$	(x, y)
-3	6	(-3, 6)
-2		
-1		
0		
1		



2. (20 pts.) Find the value of each expression without using a calculator.

- a)  $-3 + 11 =$                       b)  $-5 - (-12) =$                       c)  $-10 + (-8) =$
- d)  $2 - (-10) =$                       e)  $4 - 15 =$                               f)  $-10 - 2 =$
- g)  $-6(-9) =$                         h)  $12(-4) =$                               i)  $-48 \div 6 =$
- j)  $-6 + (-5) =$

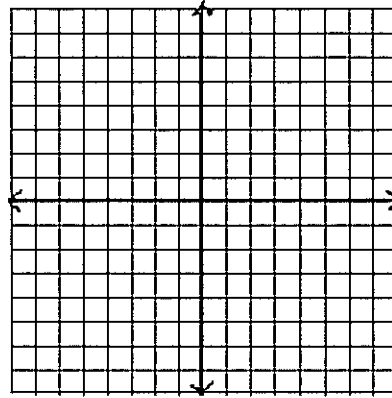
3. (20 pts.)

On the graph, label the x axis and the y axis. Now make a table with at least 5 points that work in the following equation:

$$y = 2x + 1$$

Then plot the points below and make a line.

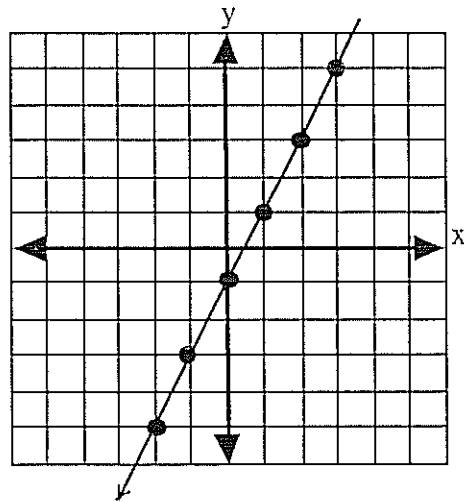
x	y



4. (10 pts.) a)

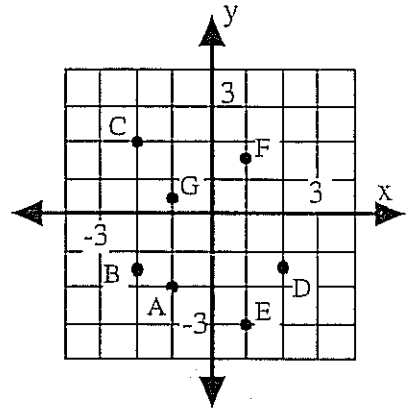
Use the graph to fill in the table

x	y



5. (10 pts.) Use the graph to answer the questions.

- a) Name the point located at  $(2, -1\frac{1}{2})$ .
- b) What are the coordinates of point G?



6. (10 pts.) Sketch the following using integer tiles.

$$5 + (-7) = -2$$

7. (10 pts.) Complete both of the following problems. Then make a diagram or explain why their answers are the same.

$$-2 + -2 + -2 =$$

$$3(-2) =$$

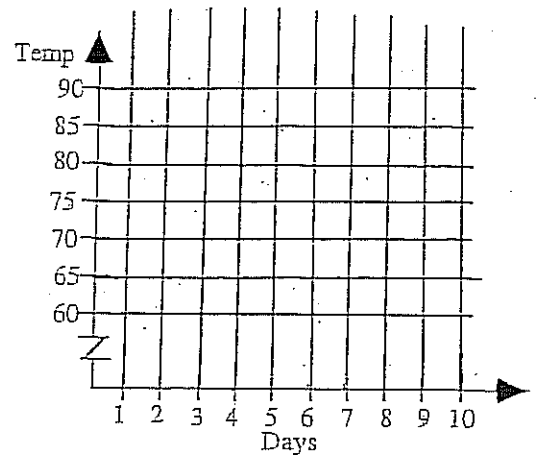
Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

**Pre-Algebra DSPA - MA-PA-02 Data Analysis & Probability**

1. (10 pts.) Use the following temperatures to make a line graph.

Day	1	2	3	4	5	6	7	8	9	10
Temp	65	70	72	76	77	72	78	80	85	83

Describe the general direction of the line as it goes from left to right.



2. (20 pts.) Jay received the following scores on his science tests.

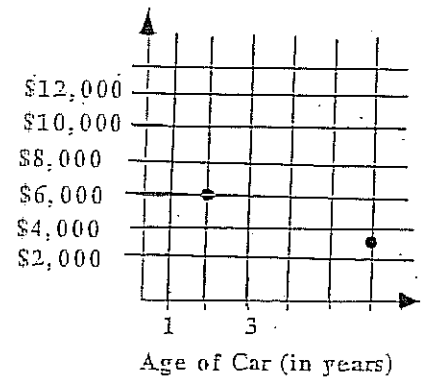
45, 65, 78, 89, 88, 67, 65, 75, 80

- a) Find the mean.
- b) Find the median.
- c) Find the mode.
- d) Find the range.

3. (10 pts.) a) Complete the graph of the age of the car in years and its price in dollars.

Age	2	1	2	3	5	4	6
Price	6000	12000	7999	5000	3500	4999	3000

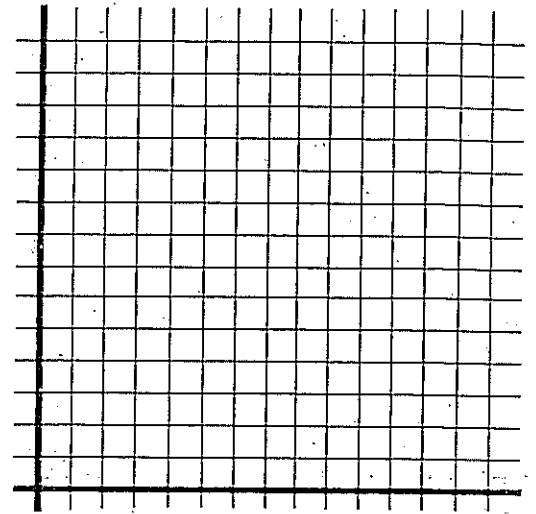
b) Complete this sentence: "As cars gets older,  
\_\_\_\_\_."



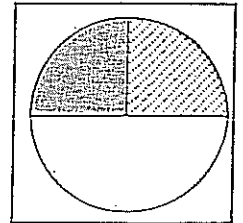
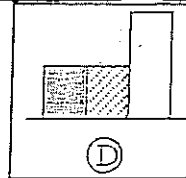
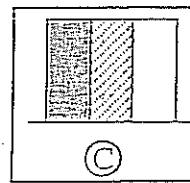
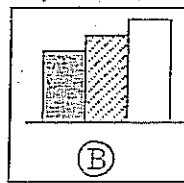
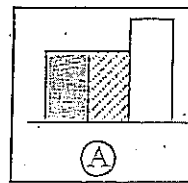
Pre-Algebra - MA-PA-02 (page 2)

4. (10 pts.) Construct a scatter plot to show the relationship between minutes spent studying and test scores. Is there a correlation for this data? If so, describe it. If not, write "not correlated."

Study Time	Test Score
20	68
26	71
28	67
32	69
38	77
43	79
46	81
53	82



5. (10 pts.) Which bar graph below represents the data from the circle at right?



6. (20 pts.) Eduardo has one bag with 6 blueberry and 4 raspberry gummy worms. He has another bag with 4 red and 8 black licorice sticks.

- If Eduardo takes one gummy worm out of the gummy worm bag, what is the probability that it will be raspberry? (State your answer as a fraction in lowest terms and as a percent.)
- If Eduardo takes one licorice out of the licorice bag, what is the probability that it will be red? (State your answers as a fraction in lowest terms and as a percent.)

Pre-Algebra - MA-PA-02 (page 3)

7. (10 pts.) There are 5 red marbles, 4 blue marbles, and 1 white marble in a bag. You take one marble without looking. What is the probability of getting a red marble?



- (A)  $\frac{2}{5}$       (B)  $\frac{2}{3}$       (C)  $\frac{1}{2}$       (D)  $\frac{1}{10}$

8. (10 pts.) An outcome grid for a game in which players flip a coin and roll a die is shown.

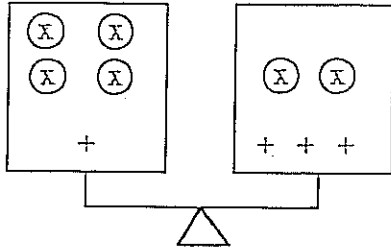
		Die					
		1	2	3	4	5	6
Coin	H	H1	H2	H3	H4	H5	H6
	T	T1	T2	T3	T4	T5	T6

- a) Use the grid to find the probability (as a fraction) that you get a heads and a 6.
- b) **Write a sentence and explain** which is more likely to occur when a player flips a coin and rolls a die: A head and an even number, or a tail and an odd number.

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**Pre-Algebra DSPA - MA-PA-03 Algebraic Expressions & Solving Equations**

1. (10 pts.) Write the equation represented by this balance scale. Solve the equation.



2. (20 pts.) Use the cover-up method to solve and check the following equations.

a)  $r - 4 = 20$

check (a):  $( \quad ) - 4 =$

b)  $8m + 2 = 26$

check (b):  $8 ( \quad ) + \underline{\quad} =$

3. (30 pts.) Solve each of the following equations. **Be sure to check your answers** by substitution.

a)  $3x + 4 = 28$

check (a):

b)  $6x - 4 = 2x + 32$

check (b):

c)  $4(x - 3) = 68$

check (c):



Pre-Algebra- MA-PA-03 (page 2)

4. (15 pts.) Translate each phrase below into an algebraic expression. Circle the correct answer.



a) Five less than a number:

- A)  $5 - x$       B)  $x - 5$       C)  $5x - 5$       D)  $5x$

b) 8 more than three times a number:

- A)  $3x + 8$       B)  $8x + 3$       C)  $8(3x)$       D)  $8 + x$

c) 9 meters longer than twice the length  $x$ :

- A)  $9x - 2$       B)  $9 - 2x$       C)  $2x + 9$       D)  $9x + 2$

5. (25 pts.) Lisa is three times as old as Elaine. Karina is 2 years older than Elaine. If you add all their ages you get 37.

a) Using the variable  $x$  to represent Elaine's age, what is Lisa's age in terms of  $x$ ?

b) Using the variable  $x$  to represent Elaine's age, what is Karina's age in terms of  $x$ ?

c) Write an **equation** to represent the sum of all three girls' ages.

d) Solve the equation in part (c) to find Elaine's age.

e) What is Lisa's age? \_\_\_\_\_ Elaine's age? \_\_\_\_\_ Karina's age? \_\_\_\_\_

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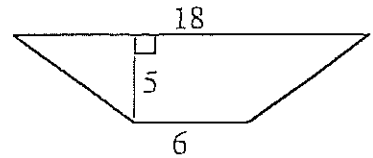
**Pre-Algebra DSPA - MA-PA-04 Area, Perimeter & Proportional Reasoning**

1. (10 pts.) What is the area of a parallelogram that has a base of 11.5 cm and a height of 5.8 cm?

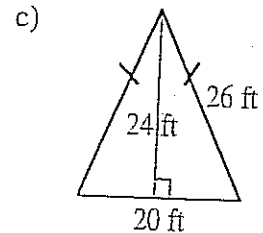
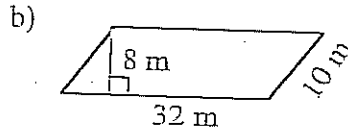
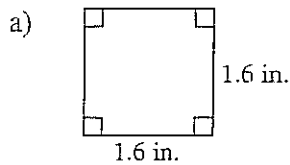


- a)  $17.3 \text{ cm}^2$     b)  $66.7 \text{ cm}^2$     c)  $34.6 \text{ cm}^2$     d)  $33.35 \text{ cm}^2$

2. (10 pts.) Calculate the area. Show your work. **Label the answer.**



3. (30 pts.) Find the area and perimeter for each of the following. **Label your answers.**



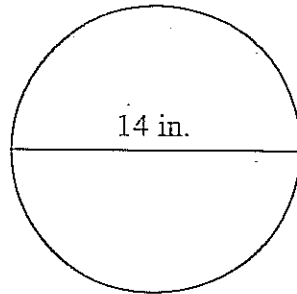
Perimeter = \_\_\_\_\_ Perimeter = \_\_\_\_\_ Perimeter = \_\_\_\_\_

Area = \_\_\_\_\_ Area = \_\_\_\_\_ Area = \_\_\_\_\_

Pre-Algebra - MA-PA-04 (page 2)

4. (10 pts.) Find the diameter, radius, area and circumference of the following circle. Remember to show all your work and label your answer. Use either  $\pi$  on your calculator or 3.14 for  $\pi$ .

a)



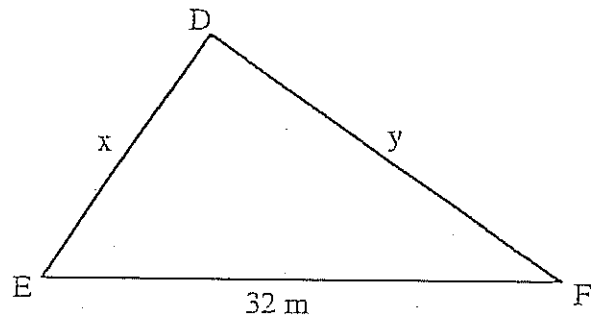
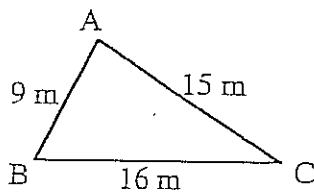
diameter =

radius =

Area =

Circumference =

5. (10 pts.) Triangle ABC is similar to triangle DEF. Solve for the unknown sides.



x =

y =

Either show your proportions **OR** explain how you got your answers.

**Pre-Algebra - MA-PA-04 (page 3)**

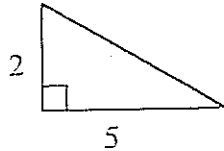
6. (10 pts.) Nikki has a shooting percentage of 55%. That is, she makes 55% of the shots she attempts. If she attempts 240 shots this season, about how many shots will she make? Show your work.
7. (10 pts.) A 12 ounce can of cola holds 355 ml (milliliters). How many milliliters are in a 20 ounce bottle of cola? Show the proportion you used to help you find the answer. Round to the nearest tenth (one decimal place).

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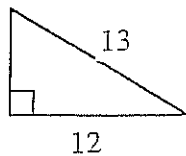
**Pre-Algebra DSPA - MA-PA-05 Pythagorean Theorem, Surface Area and Volume**

1. (10 pts.) What is the volume of a rectangular prism with a length of 16 cm, a width of 11 cm, and a height of 15 cm?
- a)  $42 \text{ cm}^3$     b)  $1320 \text{ cm}^3$     c)  $1764 \text{ cm}^3$     d)  $2640 \text{ cm}^3$

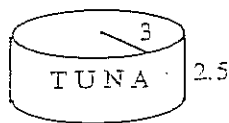
2. (10 pts.) Find the hypotenuse of the right triangle. Show your work. Round to the nearest tenth. (One decimal place)



3. (10 pts.) This right triangle is missing the length of a leg. Use the Pythagorean Theorem to find it. Show your work. Look at your answer and make sure it makes sense.

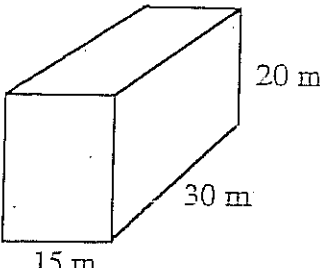


4. (10 pts.) Find the volume of this can with a radius of 3 inches and a height of 2.5 inches. Show your work and **label the answer**.



Pre-Algebra - MA-PA-05 (page 2)

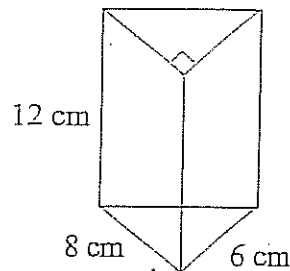
5. (20 pts.) Find the volume and surface area of the figure. Label the final answers.

	<p>Volume Formula</p>	<p>Show Work</p>	<p>Answer (Volume)</p>
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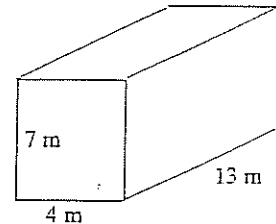
<p>Area of Faces</p>	<p>Front</p>	<p>Back</p>	<p>Top</p>	<p>Bottom</p>	<p>Right</p>	<p>Left</p>	<p>Total Surface Area</p>
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6. (20 pts.) Find the volume of these prisms. Show work clearly, and label the answers.

a)

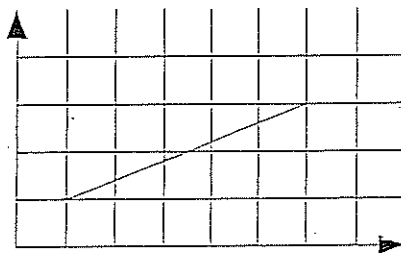


b)



7. (20 pts.) Find the lengths of the segments using the Pythagorean Theorem. Show your work. Hint: Draw two legs to make the diagram into a right triangle first. Round the answer to the nearest tenth.

a)



b)

