

Integrated Math

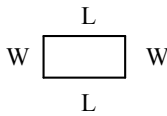
Final Exam 2007

June 19, 2007

Name _____

Have a great summer!!!

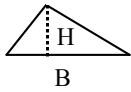
A. GEOMETRY - AREA AND LENGTH



Area of a rectangle=length x width
Perimeter of a rectangle = distance around

$$A = LW$$

$$P = 2L + 2W$$



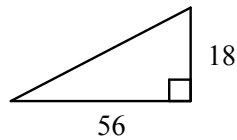
Area of a triangle= $\frac{\text{base} \times \text{height}}{2}$

$$A = \frac{BH}{2}$$



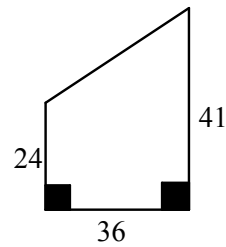
Area of a circle $A = \pi R^2$

1.



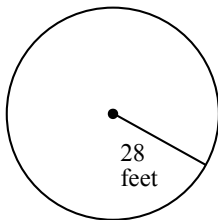
Area =

2.



Area =

3.

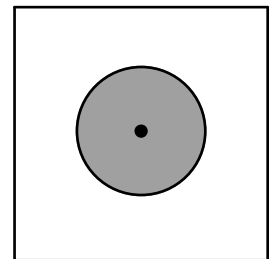


Area =

4.

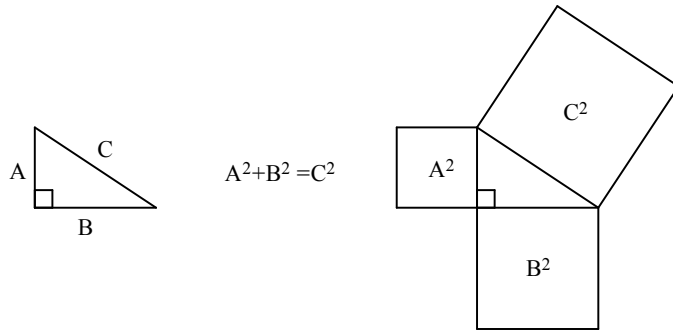
A large circular square park 105 feet on each side needs new sod to be planted. The space has a circular fountain on it with a radius of 23 feet. Obviously there will be no grass under the fountain. What is the area of the part of the park that needs grass?

Area to be planted. _____



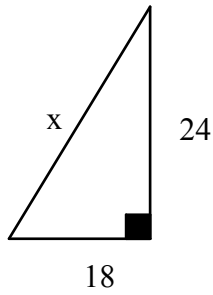
Sod costs \$1.50 a square foot. What will the sod cost? _____

B. GEOMETRY - PYTHAGOREAN THEOREM.



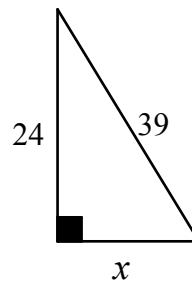
1. Find the missing side. Remember when to add and when to subtract.

a.



$x =$

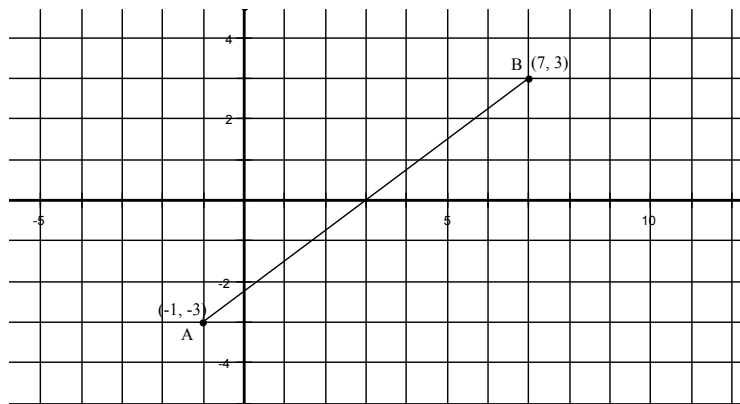
b.



$x =$

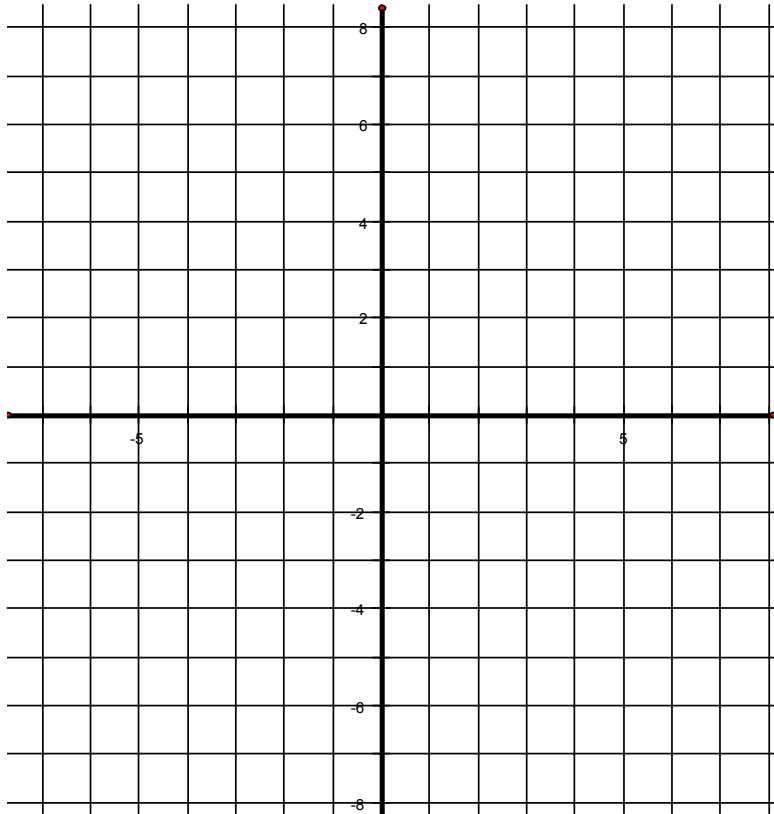
2. Suppose each square in this graph is 1 foot on each side. How far is it from A to B?

Distance =



C. LINEAR FUNCTIONS.

1. a. Graph the equation $Y = 2X - 3$. Fill out the a table of values first.



X	Y
0	
1	
2	
3	
4	

2. A balloon is now 448 feet high and is slowly falling 7 feet per second.

a. How high will the balloon be in 18 seconds?

b. How high will it be in 39 seconds?

c. Write an equation describing how high Y the balloon is after X seconds.

Y =

d. If the balloon keeps falling at this rate when will it hit the ground?

D = ST Distance = Speed x Time If you know two out of three of these you can find the third.
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3. A train travels for 21 hours and travels 1512 miles. How fast did it travel?

4. A person walks 3.5 miles per hour for 7 hours. How far did she walk?

D. SOLVE SOME EQUATIONS.

1. $6x + 8 = 80$

2. $31 = \frac{x}{11}$

3. $9 = \frac{108}{x}$

4. $217 - x = 6x$

5. $3x + 6x + 444 = 11x$

6. $2(x + 7) = 20$

7. $2(4x - 3) = 34$

E. PROBABILITY AND COUNTING.

Basic Rule of Probability $Probability = \frac{\text{Number of ways you want}}{\text{Total number of ways}}$
Convert all answers to % by multiplying by 100.

If you want to count all the ways in which you can line up 5 people the number is
 $5 \times 4 \times 3 \times 2 \times 1 = 120$.

1. The students at LHS either own ipods or don't. They either own cell phones or don't. This table tells how many of each type of student there are

	Own an ipod	Don't own ipod
Own a cellphone	1350	256
Don't own a cellphone	225	169

- How many people own an ipod?
- How many do not own an ipod?
- How many students are in the school?
- What is the chance that a student chosen randomly owns an ipod?
- What is the chance that a person chosen randomly owns a cellphone?
- What is the chance that a person chosen randomly owns an ipod and a cellphone?

2. How many four letter words can be made using any letters if it is OK to use letters more than once?

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3. How many four letter words can be made using any letters if it is NOT OK to use letters more than once?

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4. Some Massachusetts license plates read like this: 521-GAX. How many license plates can be made like this, that have **three numerical digits followed by three letters**? It is OK to repeat letters or numbers.

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5. At the restaurant buffet you have 3 choices of salad dressing, 4 choices of main dishes, 2 choices of vegetables and 6 kinds of desserts. How many different meals could you eat, by choosing one of each?

F. PROPORTIONS AND CONVERSIONS AND PERCENTS

Some useful conversions.

$$3 \text{ feet} = 1 \text{ yard}$$

$$60 \text{ minutes} = 1 \text{ hour}$$

Problems.

1. Solve this proportion.

$$\frac{28}{x} = \frac{8}{2}$$

2. Convert these fractions to percents.

a. $\frac{3}{8}$

b. $\frac{18}{42}$

3. If a train was on time 19 out of 24 days what percent of the time was it on time?

4. Convert 2220 minutes to hours. _____

5. How many yards is 9234 feet?

6. How feet is 198 yards?

G. STATISTICS

Mean:	The average.
Median:	The middle value
Mode:	The most common value.

1. Here is a table showing how many pounds lobsters weighed that were caught off Gloucester one day last week by one person.

Weight in pounds	Number of lobsters
2	3
3	2
4	13
5	10
6	10
7	2
8	1

Total 41

Median weight =

Mode weight =

Mean weight =