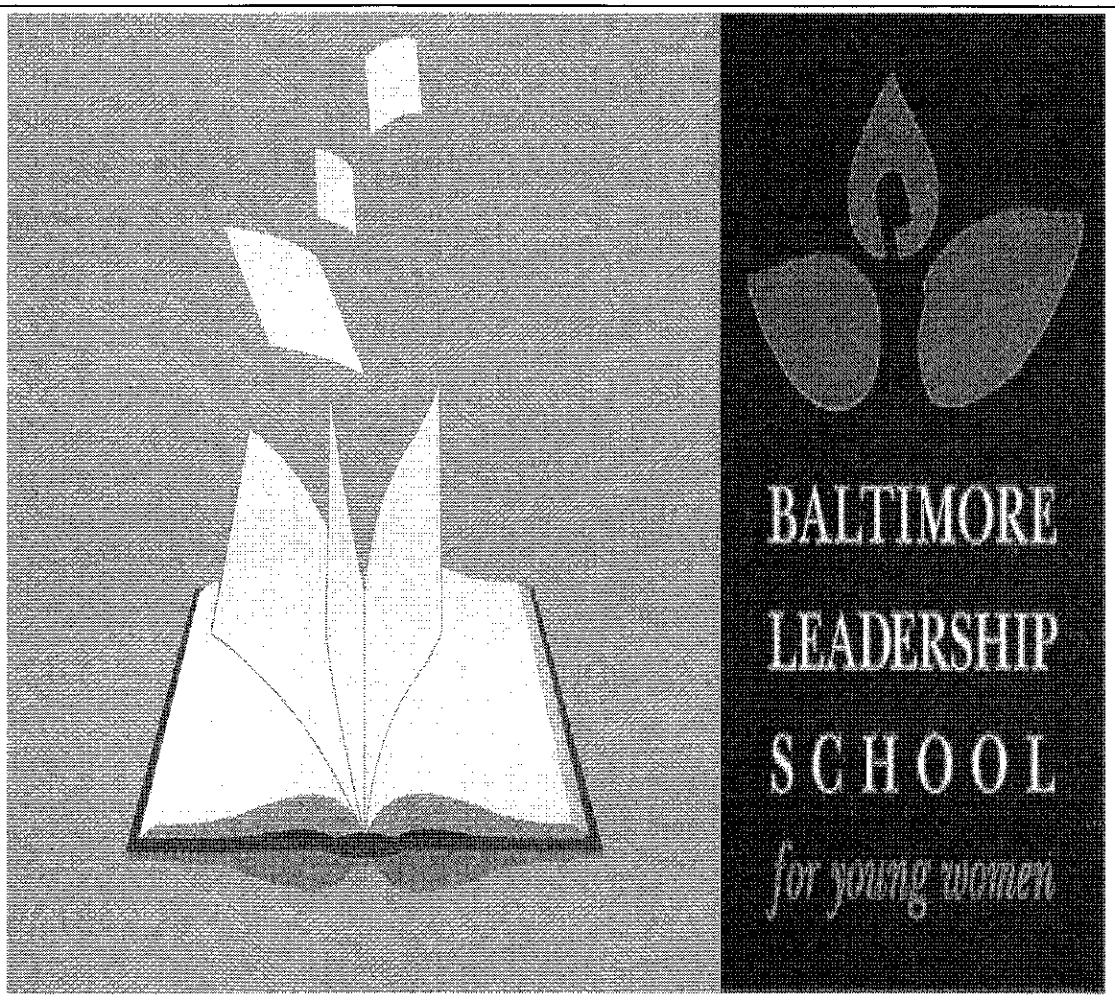
8th Grade Comprehensive Exam

STUDY GUIDE

PACKET DUE DATE: Friday, January 6, 2012



MATHEMATICS

TEST DATE: Friday, January 20, 2012

NAME:_____

COLLEGE:_____

8TH GRADE MATHEMATICS COMPREHENSIVE STUDY GUIDE

DUE January 6, 2012

Directions- Complete EVERY problem showing all of you work on separate pages. Attach those pages to this packet before submission. Have a GREAT Break!

1) A director of a play needs to cast 5 extras for her winter production. There are 15 actors that she will audition. How many possible ways are there for the director to place the actors?

2) The prices of six books are listed below:

$7.50, $5.25, $9.89, $3.97, $9.89, $7.00

Which measure of central tendency BEST describes the prices listed above?

a) Mean
b) Median
c) Mode
d) Range

3) It is BEST to use the median to describe a set of data when _____

_____

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_____

_____

_____.

4) Everyone at M and T stadium is eligible for a drawing at the end of the night. If everyone was given a number, and 10 winners are announced, what kind of sample is this? Explain.

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5) Jazmine will flip a coin and roll a 6 sided number cube. What is the probability that she will flip heads and roll an even number?

a) ½

b) ¼

c) 4/6

d) 1

6) Joe's Sandwich shop has 3 types of bread, 4 types of meet, and 2 sauces. How many different sandwiches can be made from those ingredients?

a) 9

b) 12

c) 4

d) 24

7) Minnie will roll a 6-sided number cube and spin a spinner with 5 sections. How many different possible outcomes are there?

a) 5/6

b) 11

c) 30

d) 120

8) A bag of skittles has 8 reds, 3 green, 3 yellow, 4 orange, and 6 purple. Tyshea hates green and yellow skittles. If she picks a random skittle, what is the probability that she will not get a green or yellow skittle?

a) ¼ b) ¾

c) 1/3 d) 1/6

9) There are 12 girls and 8 boys in a classroom. If a student's name is drawn randomly, what is the probability that it is a boy's name?

a) 2/3 b) 2/5

c) 3/5 d) 3/2

10) **If there are two events that can not occur simultaneously then they are_____ _____ and I find their probability by _____.**

11) A bag contains 10 red marbles, 5 gray marbles, 15 black marbles. Two marbles are randomly drawn from the bag *without replacement*. What is the probability of drawing a red marble followed by another red marble?

12) A teacher asked her students how many siblings they have. The results of the survey are shown in the table. Find the probability that a randomly chosen student has at least three siblings.

Number of Siblings	Number of Students
0	3
1	6
2	7
3	2
4	2

13) Translate the following verbal phrase into a mathematical equation and solve.

The square root of 256 times the sum of 5 and x is -2.

14) Write a verbal expression for $5 + 6m^3$

_____

_____

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_____.

15) Write an algebraic expression for the following verbal phrase.

5 less than four times the sum of a number and 9

16) **Evaluate the expression if a = -4, b = 7, c = -9**

$(a^2 + 2bc) \div 11$

ECR 1 – Complete your answer on a separate page, including all work.

A sign on a TV repair shop shows the sign below. The repairman goes on a service call that takes *n* hours.

CHARGES	
Service Call	$30.00
Labor per hour	$45.00

A) Write an expression that represents the total charges for that job.

B) Explain how you found your answer to part A, use words, symbols, or diagrams in your explanation

C) Suppose the repairman worked at one house for 5 hours. How much money would he make on that service call? Explain your answer using words, numbers symbols and LOGIC.

Yasmine wants to know which color her classmates like the best. Which of the following would be the best method for sampling her classmates?

A) Randomly select 35 students from both the fifth and fourth floors.

B) Randomly select 25 6th graders, 25 7th graders and 20 8th graders.

C) Walk around to 7 classes and poll a group of 10 students at random from each class.

D) Stand at the front door of BLSYW and ask every 3rd person that comes in the door.

17) Choose one method above that you DID not choose as the best method and describe why it is not a good method for sampling students.

18) Describe one other method that Yasmine could use to randomly select 70 students from the school.

Yasmine actually took the survey on 70 students and her results are below:

COLOR	Number of Students
Purple	31
Black	4
Pink	25
Blue	10

19) If there are 290 students in Yasmine's school discuss: A) What is the population? B) What fraction of the population is her sample? Explain both of your answers.

20) Based on Yasmine's poll results, how many students in the school do you predict really like purple? (Show your prediction calculations.)

17) Solve for z.

$$z(3^2 - 2) = 63 - z$$

18) Danyelle's age is twice six more than Sabri's age. Write an equation for Danyelle's age.

If Sabri is 7 years old, how old is Danyelle?

19) Which inequality is true?

A. $0 \leq 7$

B. $-5 > 1$

C. $1.5 < 1.2$

D. $3.90 > 3.09$

20) Burt wants to buy a pair of shoes that cost $49.95. He also wants to buy a T-shirt, but he cannot spend more than $75. 55. Which inequality models this situation?

A. $49.95 - x > 75.55$

B. $75.55 + x \geq 49.95$

C. $49.95 + x \geq 75.55$

D. $49.95 + x \leq 75.55$

21) 45 is 20% of what number? (Round to the hundredths place.)

22) Gabriela has 86 dollars in the bank today. Yesterday, she had 54 dollars in the bank. By what percentage did Gabriela's bank account increase over the past day? (Round your answer to the nearest hundredth of a percent.)

ECR 2 – Complete your work on a separate page, including all work.

Shadora is saving money for a trip to visit Wellsley College. She needs to save at least $340 to pay for her train ticket and food for her three day visit. Each week she puts fifteen dollars towards her trip.

a.) Write an inequality to model this situation.

_____

b.) Explain how you derived the above inequality using words, numbers and/or symbols.

c.) Suppose Shadora wants to leave 8 weeks after she starts saving. Will she have enough money to afford her trip in that amount of time? Explain and support with work.

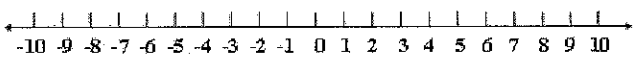
23) 37 is 60% of what number? (Round to the nearest whole number.)

24) **Jessica has breakfast at a restaurant and the cost of her meal is $37.00. She would like to leave a 20% tip. What is her total bill including tip?**

25) The sum of two consecutive integers is at most 740. Find the pair with the greatest sum.

26) Graph the inequality below.

A number z is less than -1.



27) Solve the inequality forp.

$$\frac{2p-3}{9} < -7$$

28) Solve.

$$5N + 9 \geq 34 - 8N$$

29.) Solve for c and explain each step.

$11(c-5) - 9(c+9) \geq 52 - 7c$

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