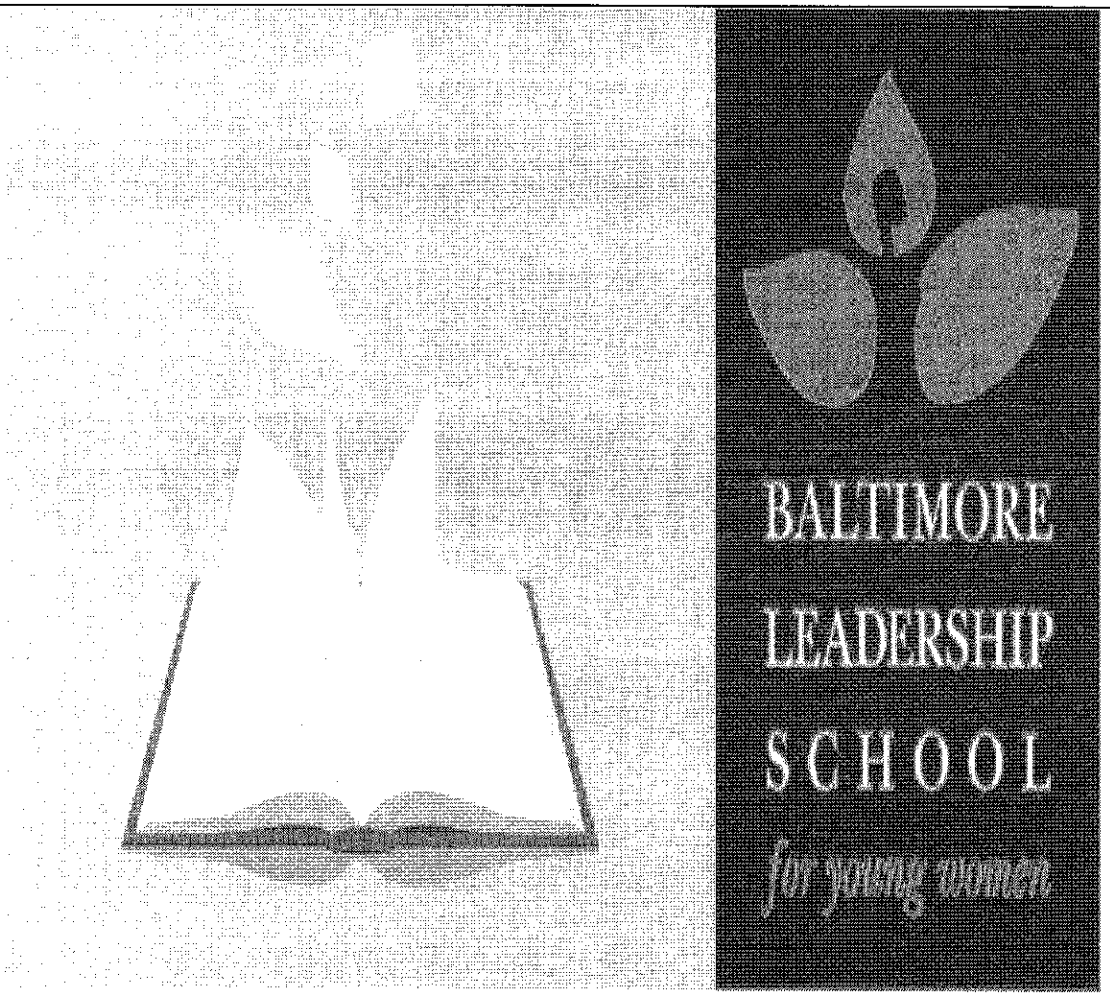
6th Grade Comprehensive Exam

STUDY GUIDE

PACKET DUE DATE: Friday, January 6, 2012



MATHEMATICS

TEST DATE: Friday, January 20, 2012

NAME:_____

COLLEGE:_____

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Operations With Fractions

Simplify the following expressions:

1. $^{8}/_{12}$ =
2. $^{55}/_{75}$ =
3. $^{33}/_{44}$ =
4. $^{16}/_{16}$ =

Adding & Subtracting Fractions:

1. $^{2}/_{3} + {}^{7}/_{6}$ =
2. $^{16}/_{24} + {}^{3}/_{8}$ =
3. $^{7}/_{10} - {}^{1}/_{12}$ =
4. $^{3}/_{5} - {}^{7}/_{60}$ =

Adding & Subtracting Mixed Numbers:

1. $3\frac{1}{2} + \frac{3}{4}$ =
2. $2\,^{6}/_{7} + {}^{5}/_{14}$ =
3. $12\,^{9}/_{10} + {}^{17}/_{40}$ =
4. $2\,^{4}/_{5} - 1\,^{7}/_{60}$ =
5. $3 - {}^{2}/_{7}$ =
6. $4 - {}^{3}/_{30}$ =

7. $9\frac{9}{8}$ Draw a visual representation of the mixed number. (Try Converting)

Multiplying Fractions & Mixed Numbers:

1. $^{3}/_{4} \times {}^{7}/_{8} =$

2. $^{7}/_{12} \times {}^{24}/_{28} =$

3. $^{18}/_{32} \times {}^{2}/_{27} =$

4. $3 \times {}^{5}/_{8} =$

5. $5\,{}^{1}/_{6} \times 8 =$

6. $1\,{}^{5}/_{6} \times {}^{3}/_{5}$

Ratios, Proportions:

A *ratio is a comparison of two separate quantities.*

Use the following table to answer the questions.

Animals in the Baltimore Zoo

Snakes	18
Lizards	9
Lions	12
Monkeys	15

1. What is the ratio of Lizards to Snakes?

2. What is the ratio of Lions to Monkeys?

3. What is the ratio of Snakes to Lions?

4. The ratio ¾ is a comparison of what 2 animals?

_____&_____

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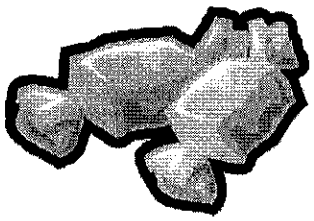
1. There are 6 green Jolly Ranchers and 8 orange Jolly Ranchers in Jasmine's candy bag. What is the ratio of orange to green Jolly Ranchers?



Ⓐ 2:4
Ⓑ 4:3
Ⓒ 3:4
Ⓓ 6:8

6. There are 14 birds for sale. 5 are Parrots and the rest are Hummingbirds. What is the ratio of Parrots to Hummingbirds?

Ⓐ 5/9
Ⓑ 5/14
Ⓒ 14/5
Ⓓ 14/9

Equivalent Forms of Rational Numbers:

Complete the following table.

Percent	Fraction (simplified)	Decimal	Word Form
	1/2		
75%			
		.2	
			Three-fourths
	5/8		
12%			
			One-sixth

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1. Mr. Schreiber took $\frac{14}{20}$ of his 6th grade class to aquarium as an end-of-the-year celebration. What is the fraction of the class expressed as a decimal?

Ⓐ .14 Ⓑ .70

Ⓒ .56 Ⓓ .20

4. Tyquan owns 15 out of 25 rare Naruto cards.

What percent of the rare cards did Tyquan own?

Ⓐ 15% Ⓑ 25%

Ⓒ 60% Ⓓ 75%

4. Which relationship is true?

Ⓐ .4 = 4% Ⓑ .3 < 23%

Ⓒ $\frac{36}{50}$ > 71% Ⓓ 25% > $\frac{16}{50}$

5. Which numbers are arranged from least to greatest?

Ⓐ $\frac{24}{50}$ 5% .53 $\frac{22}{25}$

Ⓑ 5% .53 $\frac{22}{25}$ $\frac{24}{50}$

Ⓒ $\frac{22}{25}$ .53 5% $\frac{24}{50}$

Ⓓ 5% $\frac{24}{50}$ .53 $\frac{22}{25}$

Add & Subtract Decimals

1) 2.87 + 9 =

2) 2.321 + 7.91 =

3) 7.562 + .2181 =

4) 31.34 + 1273 =

7) Kalea went to the store and bought 4 bags of Halloween candy, they cost $2.99, $1.78, $4.21 and $3.75. What was the total she spent on Halloween candy?

8) 7 – 3.2411 = **9) 82.1 – 29.31 =** **10) 123.212 - 5**

11) Makayla and Kai both like to run after school on the cross-country team. Kai ran 18.5 miles and Makayla ran 15.21 miles. How much further did Kai run than Makayla.

Rounding & Estimating Decimals:

Round to the nearest hundredths

1) 67.231 2) 9.876 3) 21.788

Round to the nearest thousandths

4) 13.2451 5) 24.9604 6) 91.0023

7) Maia wants to buy a hair clip for $4.59 and a bracelet for $7.99. About how much money will she need to purchase both?

a) between $3.00 and $4.00
b) between $7.00 and $8.00
c) between $12.00 and $13.00
d) between $15.00 and $20.00

8) Solve by estimating to the nearest whole number.

$$\begin{array}{r} 5.32 \\ -1.73 \\ \hline \end{array}$$

a) 7 **b) 6** **c) 4** **d) 3**

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Multiplying Decimals:

1) 3.21 x .26 =

2) 21.8 x .912 =

3) 1.18 x .6321 =

4) 23.109 x .2007=

5) Ms. Wheeler drives her car 3.41 miles everyday around Baltimore. How many miles does she drive in 1 week around Baltimore?

Find the GCF of the following numbers. Use a method you are comfortable with:

128 & 45

33 & 121

Dividing Decimals:

1) 2.4400÷ 8 =

2) 3.5301 ÷ 7

5. The Back to School Concert sold $1210.20 worth of tickets over the course of 6 shows. What was the average value of tickets sold at each of the shows?

Ⓐ $7,261.20
Ⓑ $20.17
Ⓒ $21.70
Ⓓ $201.70

6. Mario spent $61.25 on 5 CDs and a set of headphones. The set of headphones cost $12.55. All of the CDs were on sale for the same price. What was the sale price of each CD?

Ⓐ $9.74
Ⓑ $9
Ⓒ $12
Ⓓ $12.25

Decimal Word Problems:

1) **The BLSYW fall ball tickets cost $3.78 per student. The board has sold 27 tickets so far. What is the total amount of money made from tickets sold?**

2) **Jermanna and Katia went to the Justin Bieber concert in Philly. They spent $72.12 altogether on two concert tickets and a cheese steak for dinner. What did each ticket cost if the cheese steak was $8.99?**

3) **The teachers at BLSYW walked 23.4 miles in the charity race on Sunday. If the entire race was 26.9 miles long how much more did they need to walk to complete the whole race?**

4) **The normal temperature of the human body is 98.6 degrees. If Ms. Purpura is running a temperature of 103.2 today how much higher is her temperature than normal?**

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Exponential Form:

Define the following:

Base:_____

Exponent:_____

Circle the BASE and Underline the EXPONENT? 6^3 _____

What would the EXPONENT be in this expression? 10 x 10 x 10 x 10 10___

Evaluate the following expressions:

1. 3^3
2. 10 x 10 x 10 x 10 x 10 x 10 x 10=

3. Write the standard form of the number shown in exponential notation.

$$9 \times 10^6 + 3 \times 10^5 + 8 \times 10^2 + 6 \times 10^1$$

4. Write an expression that represents the underlined digit

187,663

5. Under Armor makes 4.091 footballs per year. What is the exponential form of this number?

Distributive Property

The distributive property distributes a coefficient as factor to the two numbers in the grouping symbol being either added or subtracted.

Example:

5(3+7)= (5x3) + (5x7)

In the following problems distribute the coefficient and then rewrite as show above, then evaluate.

1. **6(10+3)=**

2. **5(10-3)**

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5. Write an expression using the distributive property that is equivalent to the following and create a visual representation for your equivalent expression:

469 x 8

Percent of a Whole Number

1. **What is 20% of 672?**

2. **What is 15% of 360?**

3. **Montera owns a collection 640 CD's. 35% of her CD's are pop music, 45% of them are R&B and the rest the reat of them are all by Justin Beiber. How many of the CD's are Justin Beiber CD's?**

4. **The population of the endangered species the Chinese Panda increases each year by 10%. In 2010 the world's total population of the Chinese Panda was 510. What will be the population of the Chinese Panda be in 2011?**

$12 \div 4 + 22 - 10 \bullet 2 + 32 =$	

$10^2 - (3 + 4) - 24 \div 2 \times 3$	

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Prime Factorization

1. 80

2. 182

3. 232

4. 2 x 3 x _____ x _____ = 210