

Name: \_\_\_\_\_

Period: \_\_\_\_\_

# 7<sup>th</sup> Grade Semester 1 You Should Know....

Use this guide and your SBAC Interim Review to study for your final exam. Attach graph paper.

## 1. Absolute Value.

- Define: Absolute value is a number's \_\_\_\_\_  
\_\_\_\_\_
- $|-4 - 3| + |-2|$
- $|10 - 23| + |-7|$

## 2. Additive Inverse.

- Define: \_\_\_\_\_
- Give two examples of Additive Inverse.
  - \_\_\_\_\_
  - \_\_\_\_\_

## 3. Add & Subtract Integers. Use \_\_\_\_\_ to solve.

- Same signs \_\_\_\_\_
- Different signs \_\_\_\_\_
- If subtracting, use \_\_\_\_\_  
\_\_\_\_\_

## 4. Draw a number line and practice adding and subtracting integers using T-charts and number lines.

- $-3 + 7$
- $-8 - 10$
- $4 + (-10)$
- $2 - 14$
- $-9 - (-12)$

## 5. Multiply & Divide Integers. Use \_\_\_\_\_ to solve.

- Same signs \_\_\_\_\_
- Different signs \_\_\_\_\_
- If you have more than two numbers, \_\_\_\_\_  
\_\_\_\_\_

## 6. Practice Multiplying integers.

- $-5(-2)$
- $-2(-4)(3)$
- $-36 \div 6$
- $12 \div (-2)(-5)$
- $-90 \div 10 \div (-3)$

## 7. Dividing with zero.

- When zero is in the numerator, the answer is \_\_\_\_\_. Ex. \_\_\_\_\_
- When zero is in the denominator, the answer is \_\_\_\_\_. Ex. \_\_\_\_\_

Name: \_\_\_\_\_

Period: \_\_\_\_\_

8. **Unit Rate.** Circle and set up the \_\_\_\_\_ you want into a \_\_\_\_\_.  
Fill in numbers given and \_\_\_\_\_ to get a denominator of \_\_\_\_\_.

Then use your unit rate to solve problems asking for a different quantity by \_\_\_\_\_.

- A car drove 450 miles in 5 hours. How many miles per hour is the car driving (unit rate)?
- At this rate, how many miles would the car drive in 2 hours?
- 3 hours?
- 10 hours?
- On graph paper, draw and label a graph to support your data.

9. **Unit Price.** The price in \_\_\_\_\_ for \_\_\_\_\_ of each quantity.

To find a unit price, divide \_\_\_\_\_ by \_\_\_\_\_.

- Jasmine bought 12 cupcakes for \$30. What is the unit price for one cupcake?
- At this price, how much would it cost to buy 18 cupcakes?
- 20 cupcakes?
- 6 cupcakes?

10. **Complex Fractions.** Keep the \_\_\_\_\_ and \_\_\_\_\_  
by the \_\_\_\_\_ of the \_\_\_\_\_. Simplify.

a.  $\frac{\frac{2}{5}}{10}$

b.  $\frac{\frac{1}{3}}{\frac{5}{6}}$

c.  $\frac{20}{\frac{2}{9}}$

11. **Proportional Tables.** Set up fractions as \_\_\_\_\_ and reduce. To be  
proportional, all ratios must be \_\_\_\_\_.

Determine which of these tables are proportional.

a.

Hours	Dollars
2	20
3	25
4	30
5	35

b.

Hours	2	4	6	8
Dollars	12	24	36	48

- What is the constant of proportionality of the graph that is proportional?
- What is the equation of the proportional graph?

Name: \_\_\_\_\_

Period: \_\_\_\_\_

### 12. Proportional Graphs.

- For a graph to be proportional, it must be a \_\_\_\_\_ and cross the \_\_\_\_\_.
- On a proportional graph, the unit rate is where \_\_\_\_\_.
- The equation for a proportional graph takes the form  $y = \underline{\hspace{2cm}}$ .
- Lilly cooks 2 cakes per hour. How can this proportional relationship be written as an equation?
- Graph the above relationship and put a colored dot on the unit rate of the graph.
- Interpret what the point (4, 8) represents on the graph.
- Proportional graphs have a relationship that is called **Direct** \_\_\_\_\_.

### 13. Solving Proportions.

 Make sure you set up your \_\_\_\_\_ correctly.

Use \_\_\_\_\_ to solve proportions.

Set up and solve the following proportions.

- If there were 45 dogs in a shelter and 60% were adopted in January, how many dogs were adopted in January?
- 20 percent of the class got As on the final exam. If there are 30 students in the class, how many got As on the final exam?
- There are 3 red roses for every 2 pink roses. If there are 40 roses in the flowerbed, how many are there of each color rose?

### 14. Rate of Change.

 A \_\_\_\_\_ rate that an amount is changing. A relationship does not need to be proportional to have a constant rate of change. Find the rate of change by finding the **difference of the y values** and dividing by the **difference of the x values**.

Find the rate of change for the following relationships.

a.

Hours	Gallons
3	15
6	30
9	45

b.

Hours	5	6	7
Gallons	150	200	250

### 15. Slope.

 The slope of a line can be found by using the formula: \_\_\_\_\_.

You can also find it on a graph by calculating the \_\_\_\_\_.

- Use the slope formula to find the slopes from the tables in 14.a and 14.b above.
- On graph paper, graph the lines formed by the given tables. Label the rise green and the run blue.
- What do you notice about slope and rate of change?
- Bonus, what is the equation for the graph you made? (Hint, use  $y = mx + b$  format, where  $m$  is the slope and  $b$  is the y-intercept)