Unit One: Operations with Rational Numbers – Study guide   Name _____

Adding Integers "Rule"	Subtracting Integers "Rule"	Multiplying and Dividing Integers "Rules"
Same sign add and keep, different sign subtract, keep the sign of the larger (absolute) value	KCO- Keep, change, opposite Then follow addition rules	Same signs= positive Different signs = negative (cheaters triangle)

1) $|5| + |-7| =$ 5 + 7 = 12

2) During a review game, Mr. Pai's class correctly answered 66 questions on the first try. If there were 75 questions in the game, at what rate were the questions answered correctly on the first try? Express your answer as a decimal. Round to the nearest hundredth. 66/75 = 0.88

3) A submarine started at the surface of the water and was moving down at -23 kilometers per minute toward the ocean floor. The submarine traveled at this rate for 32 minutes before coming to rest on the ocean floor. What is the depth of the ocean floor? -23 x 32 = -736 km

4) What is $3\frac{5}{8}$ as a decimal? 3.625

5) Order the numbers from least to greatest. $\frac{11}{12}$, $\frac{8}{9}$, 0.91 8/9 (0.88), 0.91, 11/12 (0.916)

6) At 6 A.M. the temperature was -5°C. In the afternoon, the temperature was 10°C. What was the change of temperature during the day? 15 degrees

7) $n \bullet 9 = -90$ What is n? n = -10

8) Divide: 44.22 ÷ (-6.7)   -6.6

9) Find the product: -12 ● 9 = -108

10) What is the opposite of -10 (the additive inverse of -10)? 10

11) If you owe your friend, Terry $75, which situation will result in you breaking even ($0…. Owing no one and have no money for yourself)?
   a.   Borrow $75 from Samantha and give it to Terry.
   b.   Mow Mr. Stinson's lawn for $75 and give it to Terry.
   c.   Borrow $75 from Kenny and spend it on yourself.
   d.   Receive $75 for your birthday and give Terry half.

12. In Griffin, the temperature rises 7°F from 3 P.M. to 4 P.M. Then the temperature drops 3°F from 4 P.M. to 5 P.M. Write an expression to represent the change in temperature for Griffin. 7-3 = 4

13. Find the sum: -4 + (-3) + 5 = -2

14. The record high temperature in North Carolina is 110°F. The record low temperature is -34°F. What is the difference in these temperatures? Difference of 144 degrees

15. A small company had a profit of –$528 in January. If it continues to have the same profit each month for 4 months, what will be the company's total profit for 4 months? $-2,112

16. Draw a number line and represent -6 + 3 on the line. -3

17. Bob used $45 from his savings account to buy dinner. He used another $70 to pay the electric bill. He then earned $50 from a garage sale. Write an equation to represent this situation -45 + (-70) + 50 = -65

18. In the equality 3/14 < *x* < 3/13, which could be a value for *x*?

   a. 0.203   b. 0.213   c. 0.223   d. 0.233

19. As a front passed, the temperature changed steadily over 6 hours. Altogether it changed -18 degrees. What was the

change in temperature **per hour** for the 6 hours? -3

20. Which of these situations can be represented by the opposite of -40?

   a) The temperature dropped 40 degrees.
   b) The Christmas program was 40 minutes longer than you expected.
   c) Kathy received a 40-point deduction on her project.
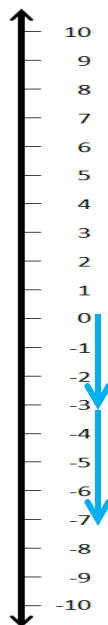   d) Zaria's car used 40 gallons of gas for the trip.

21. Which expression shows the score of a team member who scored below zero?

   a) -9 ÷ (-2)   c) -3 ÷ (-9)
   b) -9 ÷ (-3)   d) -9 ÷ 3

22. How do you find the distance between -9 and 5 on the number line?

To find the distance you find |-9| + |5| which is 9+5 = 14.

23. Illustrate the following on the vertical number line: A man entered an elevator at ground level. The elevator descended 3 floors. Then the elevator descended another 4 floors.

24. A pie crust recipe calls for $\frac{4}{5}$ teaspoon of baking powder. Alice is making 13 pies. How much baking powder does she need?

$13 \times \frac{4}{5} = 10\frac{2}{5}$