Name _____

Date _____Pd_____

# RATIONAL NUMBER OPERATIONS UNIT STUDY GUIDE

Solve each of the problems below. These represent the types of questions on your test. Be sure to ask questions if you need more help with a topic.

## I CAN REPRESENT NUMBERS ON A NUMBER LINE.

1. Use the number line below to plot points A-E.
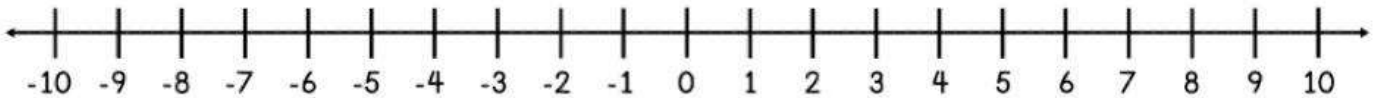
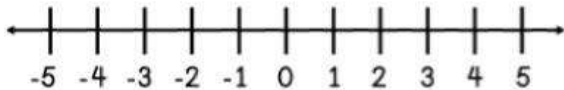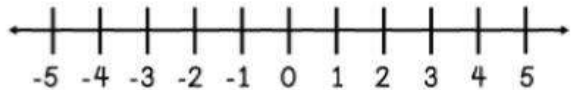A: $|-2|$     B: $|9|$     C: $|1|$     D: $|4\frac{1}{2}|$     E: $|-6|$



2. Use the number line below to show –4 plus its additive inverse.



3. Use the number line below to show 2 plus its additive inverse.



## I CAN WRITE SITUATIONS THAT COMBINE TO MAKE ZERO.

4. Write a real-world example so that it combines to make zero in each situation below.

   a. The temperature during a blizzard is –12°F. Then...

   b. The water level rises to 7 feet above normal. Then...

## I CAN SOLVE PROBLEMS.

5. Create an equivalent expression using the additive inverse property.

$$-17 - 25$$

6. Divide $\frac{2}{3}$ below and determine if it will terminate or repeat.

# I CAN ADD AND SUBTRACT RATIONAL NUMBERS.

| 7. $-16 + (8)$ | 8. $(-4) - 7$ | 9. $-24 - (-9)$ |
|---|---|---|
| 10. $6.25 + (-8.50)$ | 11. $10.8 - (-6.4)$ | 12. $-54.26 + (-15.42)$ |
| 13. $-1\frac{1}{2} + 2\frac{7}{10}$ | 14. $\frac{5}{8} - 1\frac{7}{8}$ | 15. $\frac{1}{4} - \frac{7}{8}$ |

16. Michael needs $6\frac{1}{2}$ feet of metal flashing to complete a household project. He has two small pieces measuring $3\frac{1}{8}$ feet and $1\frac{3}{4}$ feet. How many feet of metal flashing does Michael need to purchase?

17. A chemist is observing a solution's temperature over a four-hour period that starts at -12.4°C. In the four hours, the temperature rises 5.7°C and drops 8.1°C. What is the temperature of the solution after four hours?

18. Callie's cat lost $4\frac{1}{2}$ pounds before having surgery. Two weeks after having surgery, her cat gained $2\frac{7}{8}$ pounds. What was the total change in weight of Callie's cat?

19. The volleyball club is raising money for a new net and equipment. They need $842.36 to make this purchase and have received a $300.00 donation. The remaining amount will be equally divided among 4 different fundraisers throughout the summer. How much money will each fundraiser need to raise in order to purchase the new net and equipment?

# I CAN MULTIPLY AND DIVIDE RATIONAL NUMBERS.

| 20. $16 \cdot -12$ | 21. $-56 \div -8$ | 22. $-9 \cdot -16$ |
|---|---|---|
| 23. $-8.9 \cdot 1.4$ | 24. $9.1 \div -2.6$ | 25. $-5.1 \div -1.5$ |
| 26. $-\frac{6}{7} \cdot -\frac{3}{4}$ | 27. $-\frac{8}{9} \div \frac{2}{3}$ | 28. $2\frac{1}{3} \cdot -\frac{4}{5}$ |

29. Joy is reading a 352-page novel for her summer reading project. On Monday she reads $\frac{3}{8}$ of the novel. On Tuesday she reads 28 pages, and on Wednesday she reads $\frac{1}{4}$ of the novel. How many more pages does Joy have until she finishes the novel?

30. Laney walks $2\frac{1}{3}$ miles to school from her house and rides the bus home. If she attended school five days last week, how many total miles did Laney walk?

31. An art teacher is hosting a summer art camp. He has a total of $180 to purchase snacks, drinks, and art supplies. He buys 45 bags of chips at $0.55 each and 45 juice boxes at $0.80 each. How much money does he have left to spend on art supplies?

32. Felix signs up for a cell phone plan that his parents require him to pay for. His bill each month is $46.80. What impact will his cell phone bill have on his savings account over the period of a year?