**Unit 1 Study Guide**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ class \_\_\_\_\_ date \_\_\_\_\_\_\_\_\_\_\_\_**

1. George will be computing the answer to the expression listed below.

$$\left(-4\right)\left(2\right)\left(9\right)\left(-1\right)\left(4\right)\left(-1\right)\left(-2\right)$$

 Use the properties of multiplication to explain if George’s answer should be positive or
 negative. *Circle the correct response.*

1. There is an odd number of negative numbers so the answer will be positive.
2. There is an odd number of positive numbers so the answer will be negative.
3. There is an even number of negative numbers so the answer will be positive.
4. There is an odd number of negative numbers so the answer will be negative.
5. Joseph needs to multiply $\frac{3}{4} by-\frac{7}{8}$ . Joseph is not sure where the negative sign should so in his answer. *Circle the correct response.*
6. In the numerator
7. In the denominator
8. In front of the fraction
9. All of the above could be a correct location for the negative sign.
10. Michelle is an architect who builds skyscrapers. She has a sheet of measurements that she needs convert before she can begin her next project. One wall is $12\frac{3}{8} $ft long and has a width of 19.73 ft. **Change the given mixed number to a decimal**. *Circle the correct response.*
11. 12.3 ft
12. 12.375 ft
13. 12.38 ft
14. 12.83 ft
15. On a number line, what number is on the opposite side of zero from -19? *Circle the correct response.*
16. 19
17. 0.19
18. -19
19. $\frac{1}{19}$
20. Polly’s favorite cereal has 270 calories. The nutrition label on the box states that $\frac{5}{6}$ of the calories come from fat. **How many calories in the cereal come from fat?** *Circle the correct response.*
21. Which of the follow statements is true?

C

B

A



 0 2 6

1. A ˃ C ˂ B
2. B ˃ A ˃ C
3. C ˃ B ˂ A
4. A ˂ B ˂ C
5. Given$-17-(-3)$, decide which of the following expressions represents an equivalent mathematical statement. *Circle the correct response.*
6. $ 17 + (-3)$
7. $17-3 $
8. $17+3 $
9. $-17+3$
10. Which set of integers is arranged from least to greatest? **Explain how to convert the fractions to decimals**. *Circle the correct response.*
11. $\frac{1}{4}$ , 0.18, -0.4, $-\frac{3}{4}$
12. $-\frac{3}{4}$ , -0.4, 0.18, $\frac{1}{4}$
13. $-$0.4, $-\frac{3}{4}$ , $\frac{1}{4}$ , 0.18
14. $0.$18, -0.4, $-\frac{3}{4}$ , $\frac{1}{4}$
15. **Which situation below would give a quantity of zero after combining the values?** *Circle the correct response.*
16. On a cold winter day, the temperature starts out at 4 degrees, but it drops rapidly 8 degrees due to a strong cold front moving in.
17. During a football game, Jason threw a pass for a 15 yard gain, but then he lost 14 yards on the next running play.
18. Macy withdraws $240.00 from her saving account to pay for cheerleading camp. After working at the mall during the summer, she deposits the same amount that she withdrew.
19. Cole deposits $16.00 into her checking account, and then she withdraws $26.00.
20. The daily temperatures in the North Pole last week were:

|  |  |
| --- | --- |
| Day 1 | -12°F |
| Day 2 | -4°F |
| Day 3 | 0°F |
| Day 4 | 3°F |
| Day 5 | -14°F |
| Day 6 | -12°F |
| Day 7 | -9°F |

**Between which two consecutive days is the temperature change the greatest** *and why***?**

1. Which expression has the smallest value *and* ***why***? *Circle the correct response.*
2. ǀ -17 ǀ
3. - ǀ 27 ǀ
4. - ǀ -34 ǀ
5. ǀ 65 ǀ
6. Patrick is saving money to buy a video game that costs $68.
7. Patrick receives $6 every week for doing chores at home. Patrick spends $2.00 every week and saves the rest.

**How many full weeks will it take Patrick to save enough money to purchase the video game?**  *Show your work and justify your answer.*

1. Patrick can earn extra money by cutting grass. His neighbors will pay him $4.00 for each lawn that takes him 30 minutes. **What is the amount of time, in extra HOURS, that Patrick would have to spend cutting grass to be able to buy a second $68 video game for his friend?**  *Show your work to justify your answer.*
2. Mt. Kilimanjaro is 19, 341 feet above sea level. The **Sea of Galilee in Israel is 646 feet below sea level.**
3. ***Draw and label* a diagram comparing the difference between these two elevations. Let zero represent sea level on your drawing.**
4. **What is the difference in feet between these two elevations?**
5. Suppose you start walking from West Hall High School and travel eight blocks east, then 7 blocks west, and then 4 blocks east again.
6. *Draw and label* **a number line showing where you are relative to where you started. Let the school be located at zero on your number line.**
7. **How far and in which direction are you from West Hall High School?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. **How many blocks did you walk in total?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Paula and Kimberly had a jar that contained 240 M&Ms. On Tuesday, the girls at $\frac{2}{3}$ of the amount of M&Ms from the jar. On Wednesday, they ate $\frac{1}{2}$ of the remaining M&Ms from the jar.
10. **On which day did the girls eat more candy?** *Explain your answer*.
11. **How many M&Ms remain in the jar at the end of the two days?** *Show your work and explain your answer.*
12. **What fraction of the M&Ms remains in the jar at the end of the two days?** *Show your work and explain your answer.*
13. Amber’s regular wage is $8.00 per hour during the week. When she works on the weekend, the company pays her one and a half times as much per hour.
14. **Calculate Amber’s weekend hourly rate and** *show your work*.
15. **What would Amber earn if she worked** $5\frac{1}{2}$ **hours on Wednesday and 4 hours on Saturday*?*** *Show your work and explain your answer.*
16. In paintball, you get negative one-half ($-\frac{1}{2}$ ) of a point every time you hit a member of your own team. You get positive one-third ( $\frac{ 1}{3} $) of a point every time you hit a member of the opposing team. Team A did not hit any members of the opposing team and finished with a score of negative six. Team B finished with a score of positive two.
17. **Convert both given fractions (for scoring) to decimals.**

$-\frac{1}{2}$ = $\frac{1}{3}$ =

1. **If Team A had a total score of negative six, what was the number of times the team members hit their own teammates?** *Use mathematics to justify your answer.*
2. **How many points did Team B earn from hitting opposing team members?** *Show your work to justify your answer.*
3. The number line below is drawn to scale. The numbers 0 and 1 are marked on the line, as are two other numbers: **a and b**.

 19. **Simplify each expression and show your work.**

 a. $-12—15= \\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$ e. $-8\frac{9}{10}÷\frac{1}{10}$ = \_\_\_\_\_\_\_\_\_\_\_\_\_

 b. $-6.3-5.7 $= \_\_\_\_\_\_\_\_\_\_ f. $-9 ×\left(-3\right)$ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 c. $4\frac{2}{3}-6\frac{1}{2}$ = \_\_\_\_\_\_\_\_\_\_\_\_

 d. $4\frac{1}{3} ×6\frac{2}{5}$ = \_\_\_\_\_\_\_\_\_\_\_

State whether each value is positive or negative. Justify your answer.

1. 1 – a = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ c. –a = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. a – 3 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ d. ab + 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b

1

a

0