

## Review for Accelerated Grade 6: Summative Assessment #10

NO CALCULATORS

### 7.NS.1A DESCRIBE SITUATIONS IN WHICH OPPOSITE QUANTITIES COMBINE TO MAKE 0.

1. A penguin is 13 meters below sea level. It dives an additional 3 meters below sea level. How far does the penguin have to travel to get back to the surface? Explain your answer.

$$-13 + -3 = -16$$

16 meters

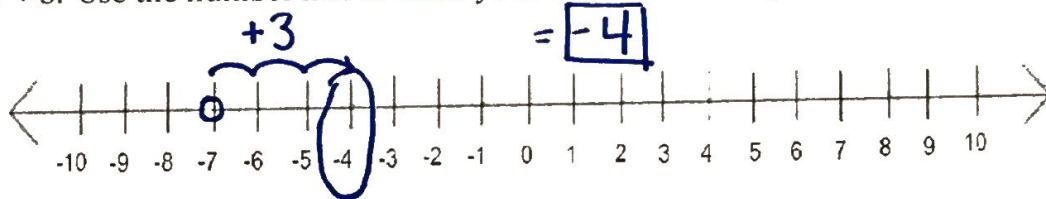
2. In a game of Jeopardy, a contestant loses \$1,600 on one question and another \$400 on another question. How much money does the contestant need to gain in order to break even (get back to \$0)? Explain your answer.

$$-1600 + -400 = -2000$$

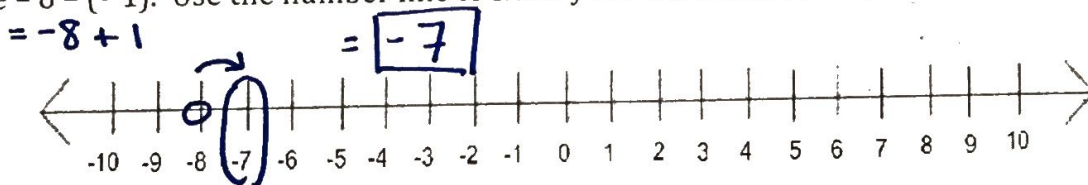
\$2,000

### 7.NS.1B,C,D ADD AND SUBTRACT RATIONAL NUMBERS

3. Evaluate  $-7 + 3$ . Use the number line to show your work and circle your answer.



4. Evaluate  $-8 - (-1)$ . Use the number line to show your work and circle your answer.



5. Which expressions are equivalent to  $\frac{2}{3} - \left(-\frac{1}{7}\right)$ ? Choose **ALL** correct answers.

A.  $-\frac{2}{3} + \left(-\frac{1}{7}\right)$     B.  $-\frac{2}{3} + \left(+\frac{1}{7}\right)$     C.  $\frac{2}{3} - \left(\frac{1}{7}\right)$     **D.**  $\frac{2}{3} + \left(+\frac{1}{7}\right)$     E.  $\frac{2}{3} + \left(-\frac{1}{7}\right)$     **F.**  $\frac{2}{3} + \left(\frac{1}{7}\right)$

6. Nicole has  $6\frac{1}{4}$  cups of frosting, then uses  $3\frac{2}{3}$  cup to frost a cake. How many cups of frosting are left? Show your work.

$$6\frac{1}{4} - 3\frac{2}{3} = 5\frac{3}{12} - 3\frac{8}{12} = 2\frac{7}{12} \text{ cups}$$

7. Perform the indicated operation. Show all work.

a.  $-\frac{5}{7} + \left(-\frac{1}{3}\right)$

$-\frac{15}{21} + -\frac{7}{21}$

$\boxed{-\frac{22}{21}}$

b.  $15\frac{1}{5} - 18\frac{1}{3}$

$15\frac{1}{5} + -18\frac{1}{3}$

$\boxed{-3\frac{2}{15}}$

$18\frac{1}{3} = 18\frac{5}{15}$   
 $-15\frac{1}{5} = 15\frac{3}{15}$   
 $\frac{32}{15}$

c.  $9.31 - (-8.7)$

$9.31 + 8.7$

$\boxed{18.01}$

d.  $-3.2 + 4.21 + (-10.1)$

$\boxed{-9.09}$

**7.NS.2A,B,C MULTIPLY AND DIVIDE RATIONAL NUMBERS**

8. Which expressions have products that are negative? Select **ALL** that apply.

$(-1)(-\frac{1}{2})(-8.9)(-8)$

$(-0.4)(\frac{1}{2})(-1)(18)$

$(-4)(\frac{2}{3})(-2)$

$(15.2)(-4\frac{2}{3})(-6)(-2\frac{1}{6})$

$(-10)(22.3)(7)(-\frac{3}{4})$

$(-\frac{1}{4})(8)(-7.2)$

$(2)(-5)$

$(-2)(-5.43)$

9. Which expressions are equivalent to  $\frac{-3}{2}$ ? Select **ALL** correct answers.

A.  $\frac{3}{2}$

B.  $\frac{3}{-2}$

C.  $-\frac{3}{2}$

D.  $-\left(\frac{3}{2}\right)$

E.  $\frac{-3}{-2}$

F.  $-\left(-\frac{3}{2}\right)$

10. Perform the indicated operation. Show all work.

a.  $\left(-\frac{2}{3}\right) \times \left(-\frac{5}{9}\right) = \boxed{+\frac{10}{27}}$

b.  $36.4 \div 5.2 = \boxed{7}$

11. Which situation below models the following equation:  $-6(5) = -30$

a. At a football game, Sean lost 5 yards on one play and then gained six yards on the next play. How many total yards did he gain or lose over those two plays?

b. Dan wants to see a show that cost \$5.00 with six of his friends. How many times did he see it?

c. The temperature outside rose at a rate of six degrees per hour in 5 hours. What was the temperature after those five hours?

d. John dove at a rate of six meters per second. If you consider the top of the water as zero, what is his position after 5 seconds?

12. A fish descends to a depth of -28 meters in 35 seconds. Find the average rate of change in the fish's depth. Show how you obtained your answer.

$$-28 \div 35 = \boxed{-0.8 \text{ meters per second}}$$

13. Charlie had  $\frac{2}{5}$  pounds of candy and splits it equally among 4 people. What is the amount of candy (in pounds) each person will receive? Show your work.

$$\frac{2}{5} \div 4 = \frac{2}{5} \times \frac{1}{4} = \frac{2}{20} \text{ OR } \boxed{\frac{1}{10} \text{ lbs.}}$$

14. Lainie runs a lemonade stand. It costs her \$0.45 to make each cup of lemonade and she decides to sell each cup for \$0.75. Her friends come by and she gives away 8 cups of lemonade to them for free.

**Part A:** Calculate how much Lainie lost in profits last week, based on what she gave away.

$$\text{Profit} = 0.75 - 0.45 = \$0.30 \text{ per cup}$$
$$\$0.30 \text{ each} \times 8 \text{ cups} = \boxed{\$2.40}$$

**Part B:** Calculate whether Lainie made a profit last week, based on what she gave away and given that she sold 32 cups of lemonade.

$$32 \text{ cups sold} \times \$0.30 \text{ profit each} = \$9.60 \text{ earned}$$
$$\$9.60 \text{ earned} - \$2.40 \text{ lost} =$$
$$\boxed{\$7.20 \text{ profit}}$$

**7.NS.2D CONVERT A RATIONAL NUMBER TO A DECIMAL USING LONG DIVISION; KNOW THAT THE DECIMAL FORM OF A RATIONAL NUMBER TERMINATES IN 0S OR EVENTUALLY REPEATS.**

15. Write each of the following fractions as decimals. Show your work.

a.  $\frac{2}{5} = \underline{0.4}$

b.  $7\frac{3}{8} = \underline{7.375}$

c.  $-3\frac{1}{6} = \underline{-3.1\bar{6}}$



16. Select ALL of the fractions that are equivalent to 0.3.

$\frac{3}{10}$

$\frac{1}{3}$

$\frac{6}{20}$

$\frac{2}{5}$

$\frac{12}{40}$

$\frac{10}{3}$

17. Anthony delivers eight packages that are each the same size and weigh a total of  $132\frac{3}{4}$  pounds. How much does each package weigh? Show your work.

$$132\frac{3}{4} \div 8 =$$

$$\frac{531}{4} \times \frac{1}{8} = \frac{531}{32} = \boxed{16\frac{19}{32} \text{ lbs.}}$$

**7.NS.3 SOLVE REAL-WORLD PROBLEMS INVOLVING THE FOUR OPERATIONS WITH RATIONAL NUMBERS.**

18. An employee earns \$7.50 per hour and makes 1.5 times their hourly wage for every hour they work over 40 hours in a week. If an employee works 48 hours in a week, how much did they earn for that week? Explain your answer.

$\rightarrow = 40 \text{ hrs. @ } \$7.50 \text{ per hr.} = \$300$   
 $+ 8 \text{ hrs. @ } \$11.25 \text{ per hr.} = \$90$   
 $(7.50 \times 1.5 = 11.25)$

$\$390$ total
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19. How many square yards of topsoil are needed to cover a backyard with a length of  $3\frac{1}{2}$  meters and a width of  $5\frac{3}{8}$  meters? Justify your answer.

$$A = l \cdot w$$

$$A = 3\frac{1}{2} \cdot 5\frac{3}{8}$$

$$A = \frac{7}{2} \cdot \frac{43}{8} = \frac{301}{16} = \boxed{18\frac{13}{16} \text{ m}^2}$$

20. Jackson walks to school  $1\frac{1}{5}$  miles away from home. After school, he walks back towards home and stops after  $\frac{3}{4}$  mile to buy candy at the store. How far was he from home at that point? Explain your answer.

$$1\frac{1}{5} - \frac{3}{4}$$

$$1\frac{4}{20} - \frac{15}{20}$$

$$\frac{24}{20} - \frac{15}{20} = \boxed{\frac{9}{20} \text{ miles}}$$