

Study Guide 7th Grade Math Unit 1a

1. Which values are equal to **8**? **all except D equal 8** CC.7.NS.1
 A. $-(-8) = 8$ B. $|8| = 8$ C. $|-8| = 8$ D. $-|-8| = -8$

2. Evaluate: $9 - |-12| = 9 - 12 = 9 + (-12) = -3$ CC.7.NS.1

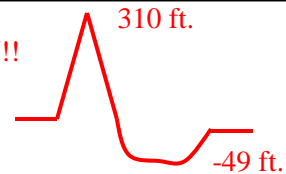
3. What is the difference of the highest and lowest elevations at the park? **DRAW!!** CC.7.NS.1

Location	Elevation
Top of the Mountain	310 feet
Bottom of the Valley	-49 feet

$$310 - (-49) =$$

$$310 + 49 =$$

$$\mathbf{359 \text{ feet}}$$



4. Evaluate. $-3 - 11 = -3 + (-11) = -14$ CC.7.NS.1

5. Evaluate. $-15 + 6 = -15 + 6 = -9$ CC.7.NS.1

6. Evaluate. $-5(-8) = 40$ **(negative times negative = positive)** CC.7.NS.2

7. Evaluate. $-35 \div (-7) = 5$ **(negative \div negative = positive)** CC.7.NS.2

8. This year, the lowest temperature recorded was -14 and the highest was 114. What is the range between the highest and lowest temperatures this year? **Draw a picture?** CC.7.NS.3

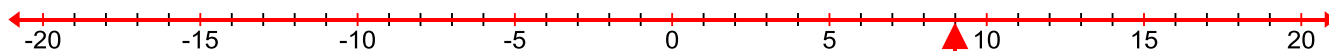
$$\mathbf{114 - (-14) = 114 + 14 = 128}$$

9. May threw a ball 26 feet in the air and it landed in a ditch that was 9 feet deep. How far did the ball drop from its highest point of 26 feet? $26 - (-9) = 26 + 9 = 35$ **(drawing may help)** CC.7.NS.3

10. Solve. $-18(4)$ **-72 (negative times a positive = negative)** CC.7.NS.2

11. Solve. $20 \div (-5)$ **-4 (positive \div negative = negative)** CC.7.NS.2

12. A Marine called from Korea to say the temperature had risen 16 degrees since the sun came up. If it was 9°F. when he called, what was the temperature BEFORE the sun came up? CC.7.NS.3



Draw number line. Start at 9 degrees (red arrow) and count 16 spaces back to -7. Now, plug it in to check... It was -7 degrees and rose 16 degrees to 9.

12. Which answer is the **smallest**? CC.7.NS.2

- A. $-16 \cdot 8 = -128$ B. $-16 \div 8 = -2$ C. $-16 + 8 = -8$ D. $-16 - 8 = -24$

13. Which answer is the **largest**?

CC.7.NS.2

A. $-16 \cdot 8 = -128$

B. $-16 \div 8 = -2$

C. $-16 + 8 = -8$

D. $-16 - 8 = -24$

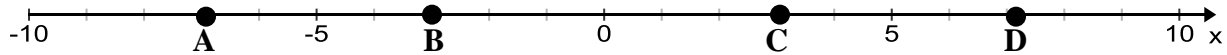
15. Solve. $-7 + 11 - (-3)$

$-7 + 11 - (-3)$
 $4 + 3$
 7

CC.7.NS.2

16. Which of the following points is found at -3 ?

CC.7.NS.1



A. A

B. B

C. C

D. D

17. Barb had \$10 in her bank account. She used her debit card to pay \$41 for dinner. What is the new balance of her bank account after the \$41 is deducted?

CC.7.NS.3

$10 - 41 = 10 + (-41) = -31$

18. What is the difference in the bank accounts of May and Kay?

$1,473 - (-44) =$
 $1,473 + 44 = \mathbf{\$1,514}$

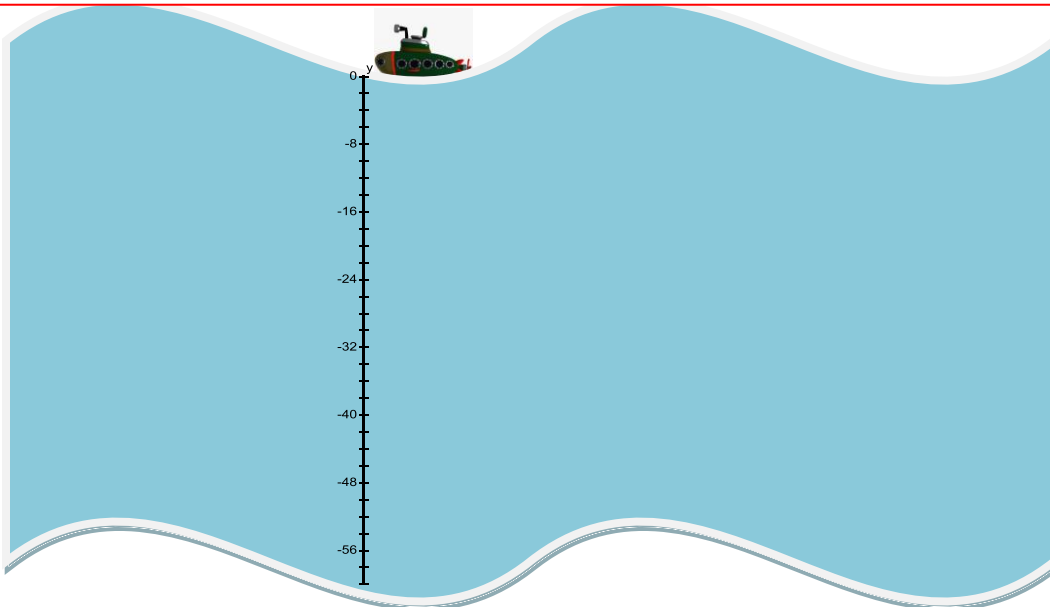
CC.7.NS.3

Account	Money in Bank
May	\$1,473
Kay	-\$44

19. The submarine dives -2 feet per second. What is its depth after 20 seconds?

CC.NS7.3

DRAW A PICTURE! Neatness and accuracy do NOT count. Now, count down by 2's twenty times. Answer is -40 or forty feet under the water.



CONSTRUCTED RESPONSE

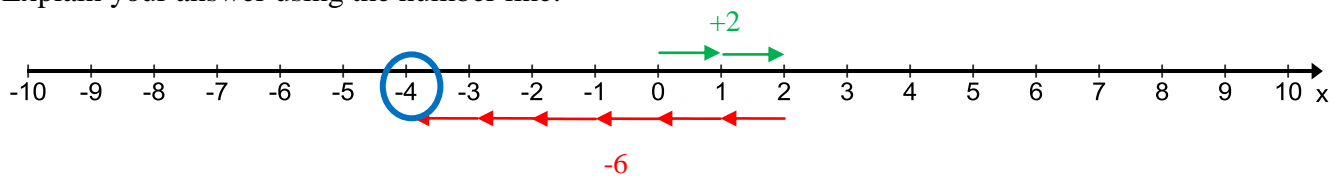
Ions are atoms or groups of atoms with positive or negative electrical charges. The charges of two fictional ions are shown in the table. Use the charges to answer the questions below.

ION	CHARGE
Brohob	+2
Drudra	-6

Part A

One brohob ion and one drudra ion are combined. What is the total charge? -4

Explain your answer using the number line:



Part B

A different atom is formed by combining 2 drudra ions and 4 brohob ions. What is the total charge? Show your work.

$$2 \text{ drudra} = 2 \text{ times } -6 = -12$$

$$4 \text{ brohobs} = 4 \text{ times } +2 = 8$$

$$-12 + 8 = -4$$

SO: The total charge for the new atom is -4

Part C

What ion(s) or from the table can be added to the atom formed in Part B to give a total charge of 0?

I need to add 2 of the brohobs.

Justify your answer.

If the total charge for the new atom is negative four, then I need positive four to make a zero pair. A brohob is worth positive 2, so two of those would make positive four and cancel out the negative four.

SCORING RUBRIC

Question Part	4.5 Points	2.25 Points	1 Point	0 Points
Part A	<i>Student has correct answer AND Student illustrates valid method on number line.</i>	<i>Student has correct answer OR Student illustrates valid method on number line.</i>	<i>Student made a true effort to complete the question, but was unable to get the correct answer</i>	<i>Student did not have correct answer AND Student did not attempt to use the number line.</i>
Part B	<i>Student has correct answer AND Student showed his work.</i>	<i>Student has correct answer BUT Student showed no work.</i>	<i>Student did not have correct answer BUT Student showed work</i>	<i>Student did not have correct answer AND Student did not show work.</i>
Part C	<i>Student has correct answer (based on his Part B answer) AND Student justified his answer well.</i>	<i>Student has correct answer(based on his Part B answer) OR Student justified his answer well.</i>	<i>Student does not have correct answer BUT Student made an attempt to justify his answer.</i>	<i>Student does not have correct answer AND Student did not attempt to justify his answer.</i>