

Grade 6 · Integers, Opposites and Absolute Value · Worksheet Answer Key

Common Core 6.NS.C.5, 6.NS.C.6a, 6.NS.C.7 · mathovore.fr

This answer key gives a full worked solution for each of the 20 problems on integers, opposites, ordering, and absolute value. Number line figures show the position of each answer, and the word problems explain the reasoning in plain language.

Grade 6 Common Core: 6.NS.C.5 · 6.NS.C.6a · 6.NS.C.7

Problem 1: Integers in context

Below zero and below sea level are negative; deposits and gains are positive.

a) -8 b) 25 c) -40 d) 6

Problem 2: Integers in More Situations

Above, rises, and gains are positive. Owes and loses are negative.

a) 15 b) -12 c) -4 d) 9

Problem 3: Find the opposite

The opposite is the same distance from 0 on the other side. The opposite of 0 is 0.

a) -7 b) 12 c) 0 d) 3.5

Problem 4: Opposites of More Numbers

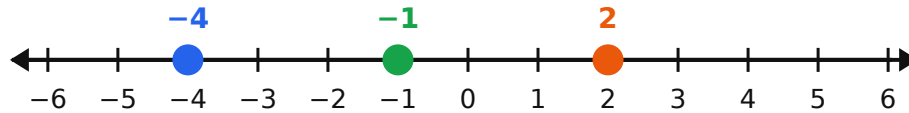
The opposite of a number is the same distance from 0 on the other side of 0.

a) -18 b) 26 c) -0.8 d) $3\frac{1}{4}$

Problem 5: Graph on a number line

Start at 0. -4 is 4 units to the left, 2 is 2 units to the right, and -1 is 1 unit to the left.

Points at -4 , -1 , and 2 .



The graphed numbers.

Problem 6: Reading a Number Line

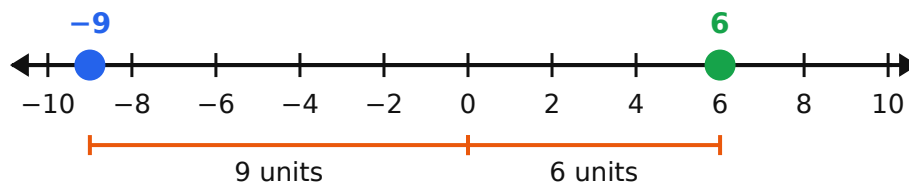
Count units from 0: left for negative, right for positive.

D: -6 **E:** -2 **F:** 3 **G:** 5

Problem 7: Absolute value

Absolute value is the distance from 0.

a) $|-9|=9$ **b)** $|6|=6$ **c)** $|0|=0$ **d)** $|-4.5|=4.5$



Distances from 0.

Problem 8: More Absolute Values

Absolute value is the distance from 0, so it is never negative.

a) $|-28|=28$ **b)** $|15|=15$ **c)** $|-0.6|=0.6$ **d)** $|-3\frac{1}{2}|=3\frac{1}{2}$

Problem 9: Compare numbers

a) -3 is left of 2. **b)** -7 is left of -4. **c)** 0 is right of -5. **d)** -2.5 is left of -2.25.

a) $-3 < 2$ **b)** $-7 < -4$ **c)** $0 > -5$ **d)** $-2.5 < -2.25$

Problem 10: Compare with Symbols

a. -8 is right of -10: $-8 > -10$

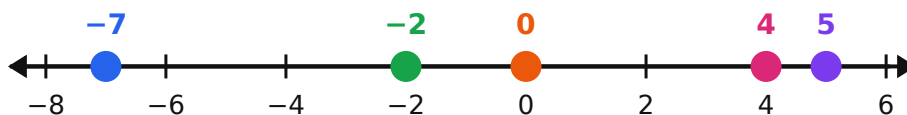
b. 0 is right of -0.1: $0 > -0.1$

- c. $|-6|=6$ and $6>4$: $|-6|>4$
 d. $|-2|=2$ and $-7<2$: $-7<|-2|$

Problem 11: Order integers

Negative numbers come first, with the farthest left being least: $-7<-2$. Then 0, then the positive numbers $4<5$.

$-7, -2, 0, 4, 5$

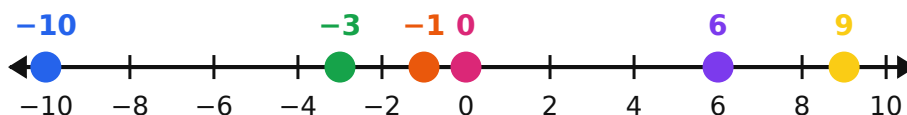


Integers from least to greatest.

Problem 12: Order Six Integers

Negative numbers are left of 0, and the farthest left is least: $-10<-3<-1$. Then 0, then the positive numbers $6<9$.

$-10, -3, -1, 0, 6, 9$



The integers from least to greatest.

Problem 13: Order rational numbers

Write each number as a decimal: $-\frac{1}{2}=-0.5$ and $\frac{1}{4}=0.25$. The decimals are $-0.5, 0.75, -1.5, 0.25$. In order: $-1.5<-0.5<0.25<0.75$.

$-1.5, -\frac{1}{2}, \frac{1}{4}, 0.75$

Problem 14: Order from Greatest to Least

Write each number as a decimal: $-2\frac{1}{4}=-2.25$ and $\frac{1}{2}=0.5$. The decimals are $2.5, -2.25, 0.5, -0.75$.

The positives come first: $2.5>0.5$. Of the negatives, -0.75 is closer to 0, so $-0.75>-2.25$.

$2.5, \frac{1}{2}, -0.75, -2\frac{1}{4}$

Problem 15: Parking Garage Levels

- a. $-3 < -1 < 3$: **Mei, Noah, Diego**
b. $|-3| = 3$ and $|3| = 3$. **Mei and Diego are both 3 levels from street level, because -3 and 3 are opposites.**



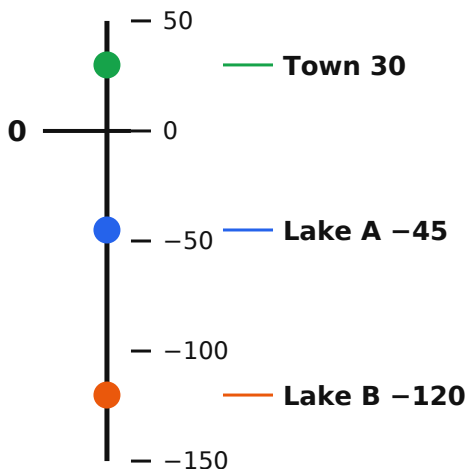
Mei and Diego are 3 levels from street level.

Problem 16: Hiking elevations

Order by position: $-120 < -45 < 30$, so the order is Lake B, Lake A, town.

Distances from sea level: $|-120| = 120$, $|-45| = 45$, $|30| = 30$. The greatest distance is 120 feet.

Lake B, Lake A, town; Lake B is farthest from sea level.

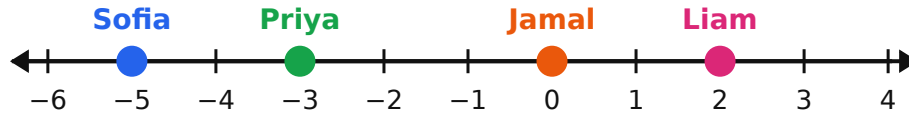


Lowest to highest: Lake B, Lake A, town.

Problem 17: Mini-Golf Scores

- a. $-5 < -3 < 0 < 2$: **Sofia, Priya, Jamal, Liam**

- b. $|-5|=5$, $|-3|=3$, $|0|=0$, $|2|=2$. **Sofia, at 5 units from 0.**
- c. **-5 is farther left on the number line, so it is the lesser number. Because the lowest score wins, Sofia is 5 strokes under par and Priya only 3 under par.**



Scores from best to worst, left to right.

Problem 18: Winter temperatures

- a) The lowest temperature is -11 , so **Thursday** is coldest.
- b) $-11 < -8 < -3 < 2$. -11 , -8 , -3 , 2
- c) -11°F is 11 degrees below zero and -8°F is only 8 degrees below zero. Since -11 is farther to the left on the number line, it is the lesser number and the colder temperature.

Problem 19: Weekly Low Temperatures

- a. The least temperature is -9 : **Wednesday**
- b. $-9 < -4 < -2 < 4 < 6$: -9 , -4 , -2 , 4 , 6
- c. $|-4|=4$ and $|4|=4$. **Monday and Tuesday. The temperatures are opposites, not equal.**
- d. $|-2|=2$ is the smallest absolute value (the others are 4, 4, 9, and 6): **Thursday**

Problem 20: Account balances

- a) $-35 < -20 < 15$. -35 , -20 , 15
- b) $|-35|=35$ and $|-20|=20$. **Ethan owes more, 35 dollars compared with 20 dollars.**
- c) -35 is farther to the left on the number line, so it is less than -20 . Its absolute value is greater because it is farther from 0, which means a larger debt.