

# Integers and Rational Numbers: math practice, Grade 6 – download the PDF

21 problems graded by difficulty (★ easy, ★★ medium, ★★★ hard). Try first, without looking at the solutions!

## 1 Writing situations with signed numbers



Write each situation as an integer.

- a. A hiker is 12 feet below sea level.
- b. A football team gains 8 yards.
- c. You owe your friend 15 dollars.
- d. The temperature is 6 degrees above zero.

## 2 Finding opposites



Give the opposite of each number: 9, -14, 0, -3.5,  $\frac{7}{8}$ .

### 3 Comparing integers



Write  $<$ ,  $>$  or  $=$  in each blank.

a.  $-5$  \_\_\_  $3$

b.  $-8$  \_\_\_  $-2$

c.  $0$  \_\_\_  $-1$

d.  $4$  \_\_\_  $-10$

### 4 Absolute values

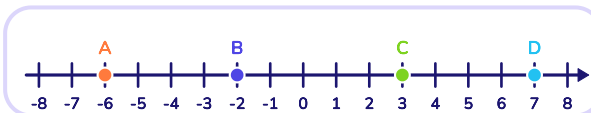


Find  $|-9|$ ,  $|12|$ ,  $|0|$ ,  $|-2.5|$  and  $|\frac{3}{4}|$ .

### 5 Reading a number line



Read the value of each point on the number line.



### 6 Naming quadrants



Tell which quadrant each point is in, or say it lies on an axis:  $(4, 7)$ ,  $(-3, 5)$ ,  $(-6, -1)$ ,  $(2, -8)$ ,  $(0, 5)$ .

## 7 True or false?



Say whether each statement is true or false and explain.

- a. Every integer is a rational number.
- b. Zero is a positive number.
- c. The opposite of  $-7$  is  $7$ .
- d.  $|-5| = -5$ .

## 8 Ordering integers and decimals



Order each list from least to greatest.

- a.  $-3$ ,  $2$ ,  $-7$ ,  $0$ ,  $-1$
- b.  $-1.2$ ,  $0.5$ ,  $-0.8$ ,  $0.08$

## 9 Fractions on the number line



(a) Convert  $-\frac{3}{4}$ ,  $\frac{1}{2}$  and  $-\frac{5}{4}$  to decimals and order them. (b) Which is less,  $-\frac{2}{3}$  or  $-\frac{3}{4}$ ?

## 10 A week of temperatures



The morning temperatures (in  $^{\circ}\text{F}$ ) were: Monday  $-4$ , Tuesday  $-9$ , Wednesday  $2$ , Thursday  $-1$ , Friday  $-6$ .

- a. List the days from coldest to warmest.
- b. Which days were below  $-5^{\circ}\text{F}$ ?
- c. By how many degrees did the temperature rise from Tuesday to Wednesday?

## 11 Money and debts



Maya's account balance is  $-45$  dollars. (a) What does this mean? (b) She deposits 30 dollars. What is the new balance? (c) One friend owes 60 dollars and another owes 35 dollars. Who owes more? Write the comparison with negative numbers.

## 12 Absolute value versus order

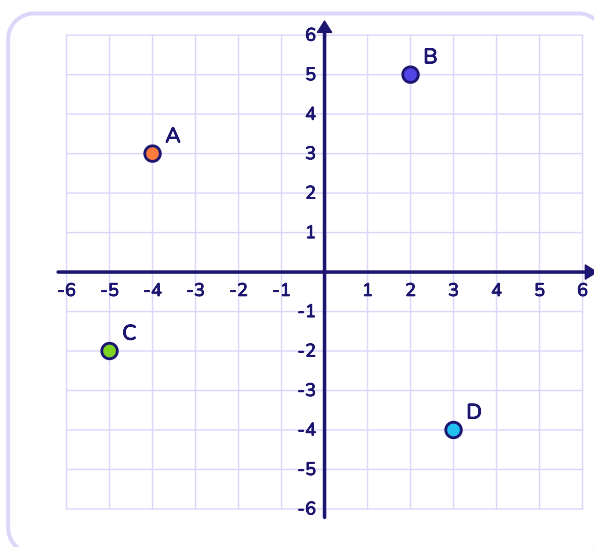


- Compare  $|-8|$  and  $|5|$ , then compare  $-8$  and  $5$ .
- Is this true or false: " $-12 > 7$  because  $|-12| > |7|$ "?
- Which has the smaller absolute value,  $-0.3$  or  $0.25$ ?

## 13 Reading coordinates



Give the ordered pair of each point and its quadrant.



## 14 Reflecting a point



The point  $P(5, -2)$  is reflected across the x-axis, then (starting again from P) across the y-axis, then across both axes. Give the three images.

### 15 Submarine and seabird



A submarine is at  $-240$  feet (relative to sea level) and a seabird flies at  $120$  feet.

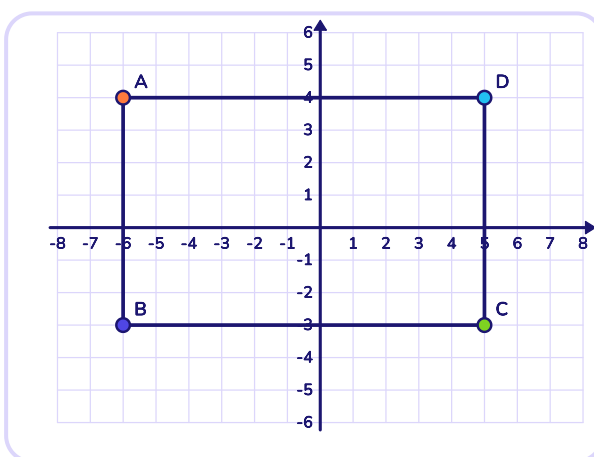
- How far apart are they vertically?
- The submarine rises 85 feet. What is its new elevation and the new distance to the bird?
- How far must the submarine rise to reach the surface?

### 16 Rectangle on the grid



Rectangle ABCD has vertices  $A(-6, 4)$ ,  $B(-6, -3)$ ,  $C(5, -3)$  and  $D(5, 4)$ .

- Find AB and BC.
- Find the perimeter and the area.



### 17 Walking across the map



On a town map each unit is  $\frac{1}{2}$  mile. The park is at  $(-3, 2)$ . The library is the reflection of the park across the y-axis. The school is the reflection of the library across the x-axis.

- Find the coordinates of the library and of the school.
- How many miles is it from the park to the library?
- How many miles do you walk going park, library, school?

**18 Two reflections in a row**

The point  $(-7, 3)$  is reflected across the x-axis, and the image is reflected across the y-axis.

- Give both images and the quadrant of the start and of each image.
- How is the final point related to the start?
- Where does  $(-2.5, 4)$  end up after the same two reflections?

**19 Changing lake level**

A lake's level changed by these amounts (in inches) over four weeks:  $-\frac{3}{4}$ ,  $+1\frac{1}{2}$ ,  $-2\frac{1}{4}$ ,  $+\frac{1}{4}$ .

- Order the changes from least to greatest.
- Which week had the largest drop?
- What was the total change over the four weeks?

**20 Reasoning with absolute value**

- List the integers  $x$  with  $|x| \leq 3$ . How many are there?
- Which of them are also greater than  $-2$ ?
- Find all numbers whose absolute value is  $6.5$ .
- Explain why  $-7 < -2$  even though  $-7$  is farther from zero.

21

**Missing vertex**

Three vertices of a rectangle are  $(-2, -1)$ ,  $(4, -1)$  and  $(4, 3)$ .

- Find the fourth vertex.
- Find the side lengths, the perimeter and the area.

**Test yourself: quick challenge for Grade 6**[Change level](#)

Level : **Grade 6**

6 random questions, instant feedback.

**Start the challenge****Speed drill for Grade 6: how many in 60 seconds?****Keep exploring with Zyro**

✔ **Practice solutions**

Integers and Rational Numbers: practice solutions, Grade 6

■ **Math lessons**

Integers and Rational Numbers: math lesson, Grade 6

🎯 **Math quizzes**

Integers and Rational Numbers: math quiz, Grade 6

✔ **Practice solutions**

Numerical and Algebraic Expressions: practice solutions, Grade 6

✔ **Practice solutions**

Equations and Inequalities: practice solutions, Grade 6

■ **Math lessons**

Numerical and Algebraic Expressions: math lesson, Grade 6

## Zyro vous emmène sur nos sites partenaires

Embarquez pour d'autres planètes du savoir et leurs applis.

Décollage