LESSON MAKER PRO

# Distance From Zero

*Use absolute value to measure and compare distances from 0.*

**GRADE 6 · MA.6.NSO.1.4**

**MA.6.NSO.1.4** "Solve mathematical and real-world problems involving absolute value, including the comparison of absolute value."

NAME _____ DATE _____

## THE BIG IDEA

Absolute value tells how far a number is from 0 on a number line. Distances are never negative, so find each distance before comparing absolute values.

## WORKED EXAMPLE

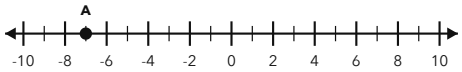
Find |-18|.

1. Start at -18 on the number line.
2. Count the distance from -18 to 0.
3. The distance is 18 units.

**Answer: 18**

## PRACTICE 6 problems

**1** Point A is shown on the number line. Find |A|.




**ANSWER** _____

**2** Find |13|.

**ANSWER** _____

**3** Which number has the greater absolute value, -15 or 12?

**ANSWER** _____

**4** Order -6, 4, and -10 from least to greatest absolute value.

**ANSWER** _____

**5** Solve: |x| = 9.

**ANSWER** _____

**6** Is |-11| > |14|? Explain.

**ANSWER** _____

## APPLY IT Show your work

**1** Use the Arcade Tournament Score Changes table. Which round had the score change with the greatest absolute value? How many points greater was its magnitude than the smallest score change?

**ARCADE TOURNAMENT SCORE CHANGES**

| Round | Score Change |
|---|---|
| 1 | -16 |
| 2 | +9 |
| 3 | -6 |

WORK SPACE

**ANSWER** _____

**2** For a school field day, the temperature is -3 degrees C at 6 a.m. and 8 degrees C at 3 p.m. Which temperature is farther from 0, and by how many degrees?

WORK SPACE

**ANSWER** _____

## CHALLENGE One step up

Write all integer values of x that make $|x| < 4$. Explain how you know.

WORK SPACE AND ANSWER

**ANSWER KEY**

# Distance From Zero

**GRADE 6 · MA.6.NSO.1.4**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | Point A is shown on the number line. Find \|A\|. | **7** |
| 2 | Find \|13\|. | **13** |
| 3 | Which number has the greater absolute value, -15 or 12? | **-15** |
| 4 | Order -6, 4, and -10 from least to greatest absolute value. | **4, -6, -10** |
| 5 | Solve: \|x\| = 9. | **x = -9 or x = 9** |
| 6 | Is \|-11\| > \|14\|? Explain. | **No. \|-11\| = 11 and \|14\| = 14, so 11 < 14.** |

## PART 2 · APPLY IT

1. **Round 1. Its magnitude was 10 points greater than the smallest score change.** The absolute values are 16, 9, and 6. Round 1 has the greatest magnitude, and 16 - 6 = 10.
2. **8 degrees C is farther from 0 by 5 degrees.** The absolute values are 3 and 8. Since 8 - 3 = 5, 8 degrees C is farther from 0 by 5 degrees.

## CHALLENGE

**x = -3, -2, -1, 0, 1, 2, or 3. These integers are less than 4 units from 0.**

Accept x = 9 or x = -9 in either order. For explanations, accept equivalent statements that correctly compare distances from 0.