LESSON MAKER PRO

# Changing Directions

*Read rates and values on piecewise graphs.*

**HIGH SCHOOL · A1.F.1.4**

**A1.F.1.4** "Read and interpret the linear piecewise function, given a graph modeling a situation."

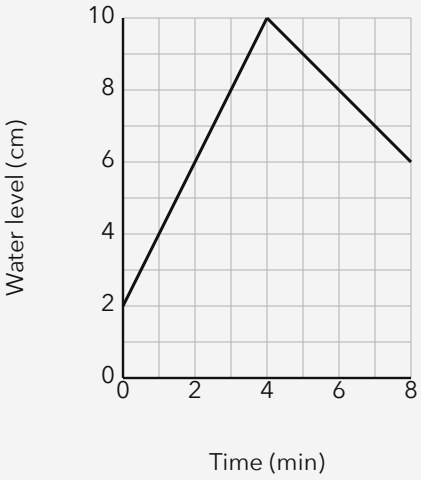
**NAME** _____ **DATE** _____

### READ EACH SEGMENT

A straight segment shows a constant rate of change. To find that rate, divide the change in the vertical value by the change in the horizontal value. At a corner, check whether the rate changes.

**WORKED EXAMPLE**

The graph shows water level over time. What is its rate of change from minute 4 to minute 8?




1. Read the points (4, 10) and (8, 6).
2. Divide the changes: (6 - 10)/(8 - 4) = -1.

**Answer: -1 cm/min**

## PRACTICE 4 problems

**1** Use the skate trip graph in Apply 1. When is the rider farthest from the park?

**ANSWER** _____

**2** Use the skate trip graph in Apply 1. How fast does the rider travel toward the park?

**ANSWER** _____

**3** Use the storage graph in Apply 2. When does storage start decreasing?

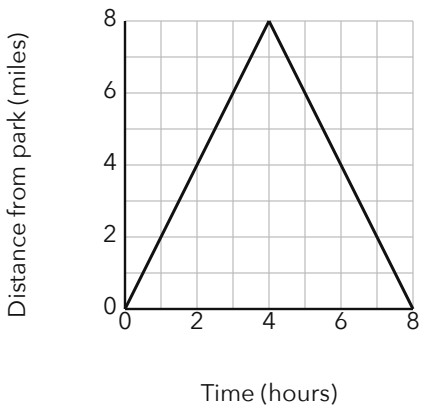
**ANSWER** _____

**4** Use the storage graph in Apply 2. What is the rate of change after day 4?

**ANSWER** _____

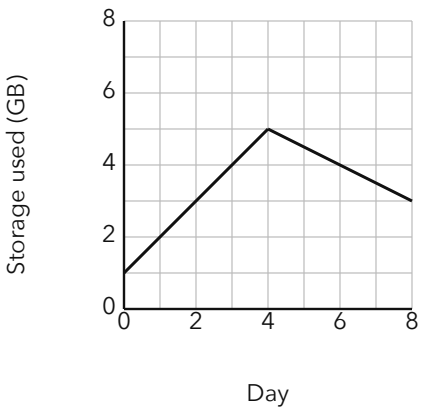
## APPLY IT Show your work

**1** Apply 1. A rider leaves a skate park, then heads back. After traveling toward the park for 1 hour, how far away is the rider?




**ANSWER** _____

**2** Apply 2. A student adds files to a device, then deletes some. How much does the storage used change from day 2 to day 6?




**ANSWER** _____

## CHALLENGE One step up

Compare the graphs in Apply 1 and Apply 2. At which two times do they show the same numerical output? Give each time and output.

WORK SPACE AND ANSWER

ANSWER KEY

# Changing Directions



## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | Use the skate trip graph in Apply 1. When is the rider farthest from the park? | **4 hours** |
| 2 | Use the skate trip graph in Apply 1. How fast does the rider travel toward the park? | **2 miles per hour** |
| 3 | Use the storage graph in Apply 2. When does storage start decreasing? | **Day 4** |
| 4 | Use the storage graph in Apply 2. What is the rate of change after day 4? | **-1/2 GB per day** |

## PART 2 · APPLY IT

1. **6 miles** The rider turns toward the park at hour 4. One hour later is hour 5, when the graph shows 6 miles.
2. **An increase of 1 GB** Read 3 GB at day 2 and 4 GB at day 6. The net change is 4 - 3 = 1 GB.

## CHALLENGE

**At time 1, both outputs are 2. At time 6, both outputs are 4.**

Accept -2 miles per hour as the signed rate in Practice 2 if the student identifies it as travel toward the park. In the challenge, the outputs have different units; only their numerical values match.