LESSON MAKER PRO

# Spot the Trend

*Plot paired data and predict what comes next.*

**HIGH SCHOOL · MM.D3D.B.15.a**

**MM.D3D.B.15.a** "Create a scatter plot with a sufficient number of data points to predict a pattern."

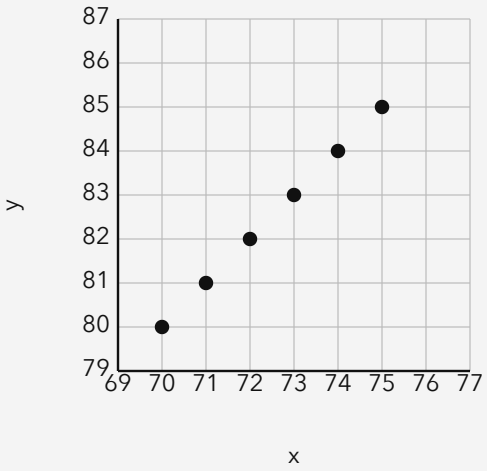
NAME _____ DATE _____

## THE BIG IDEA

A scatter plot has one dot for each pair of measurements. Plot several pairs, look for a pattern, and use that pattern to predict a new value.

## WORKED EXAMPLE

The scatter plot shows six pairs. Predict y when x = 76.




1. As x increases by 1, y increases by 1.
2. Extend the pattern one more step from the last dot.

**Answer: When x = 76, predict y = 86.**

## PRACTICE 4 problems

**1** Plot (1, 2), (2, 4), (3, 6), (4, 8), (5, 10), (6, 12). Predict y when x = 7.

**ANSWER** _____

**2** Plot (0, 9), (1, 8), (2, 7), (3, 6), (4, 5), (5, 4). Predict y when x = 6.

**ANSWER** _____

**3** Plot (0, 1), (2, 2), (4, 3), (6, 4), (8, 5), (10, 6). Predict y when x = 12.

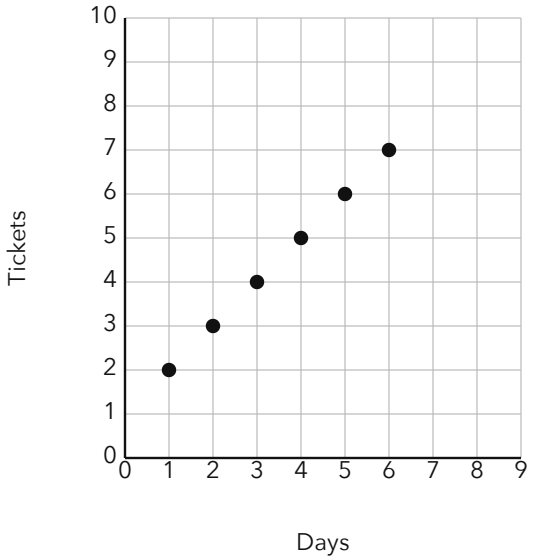
**ANSWER** _____

**4** Plot (0, 12), (1, 10), (2, 8), (3, 6), (4, 4), (5, 2). Predict y when x = 6.

**ANSWER** _____

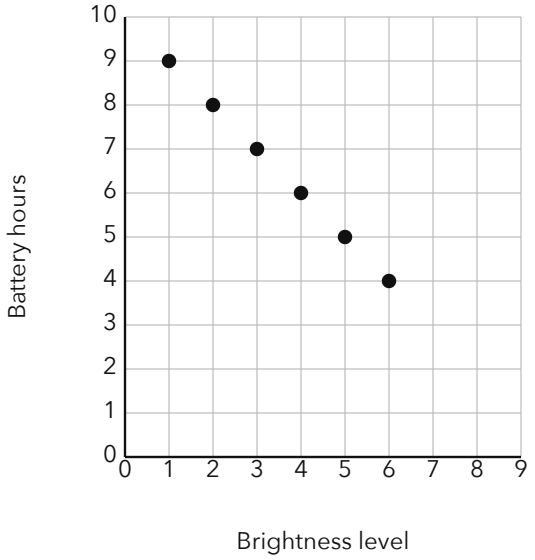
## APPLY IT Show your work

**1** The plot shows days since concert tickets went on sale (x) and tickets bought by a group (y). Add the new pair (7, 8). Predict the total bought by day 8.




**ANSWER** _____

**2** The plot compares a phone's screen brightness level (x) with battery hours (y). Add the new pair (7, 3). Predict battery hours at level 8.




**ANSWER** _____

## CHALLENGE One step up

Plot all eight pairs: (0, 0), (1, 1), (2, 4), (3, 9), (4, 16), (5, 25), (6, 36), (7, 49). Is the pattern straight or curved? Predict y when x = 8 and explain.

WORK SPACE AND ANSWER

ANSWER KEY

# Spot the Trend

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## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | Plot (1, 2), (2, 4), (3, 6), (4, 8), (5, 10), (6, 12). Predict y when x = 7. | **14** |
| 2 | Plot (0, 9), (1, 8), (2, 7), (3, 6), (4, 5), (5, 4). Predict y when x = 6. | **3** |
| 3 | Plot (0, 1), (2, 2), (4, 3), (6, 4), (8, 5), (10, 6). Predict y when x = 12. | **7** |
| 4 | Plot (0, 12), (1, 10), (2, 8), (3, 6), (4, 4), (5, 2). Predict y when x = 6. | **0** |

## PART 2 · APPLY IT

1. **Plot (7, 8); predict 9 tickets on day 8.** The new dot continues the pattern of one more ticket each day. Extend it one day to (8, 9).
2. **Plot (7, 3); predict 2 battery hours at level 8.** The new dot continues the downward pattern. Extending it one level gives (8, 2).

## CHALLENGE

**Curved; y = 64 when x = 8. Each y-value is $x^2$, so $8^2 = 64$.**

Accept correctly placed dots and the stated predictions. In the challenge, accept an explanation that the increases in y grow rather than stay constant.