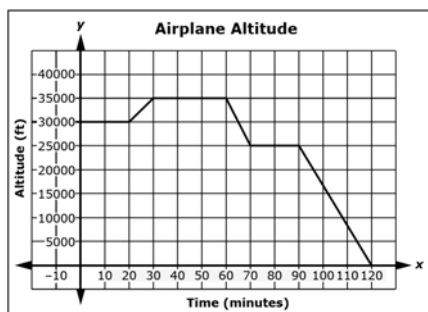


## Check for Understanding

### Create and Analyze Piecewise Functions: Investigation 1

An airplane is cruising at an altitude of 30,000 feet. The graph shows the remainder of the flight as the pilot makes adjustments to avoid turbulence and other air traffic. Use the graph of the airplane's altitude over time to answer questions 1-3.



1. Use inequalities to identify the domain and range of the function that describes all the recorded altitudes.

A. Domain:  $0 \leq x \leq 120$

B. Range:  $0 \leq y \leq 35,000$

2. Match each equation to the interval over which it is defined on the graph.

- |                                      |                          |
|--------------------------------------|--------------------------|
| A. $y = -1,000x + 95,000$            | I. $0 \leq x < 20$       |
| B. $y = 25,000$                      | II. $20 \leq x < 30$     |
| C. $y = 30,000$                      | III. $30 \leq x < 60$    |
| D. $y = -\frac{2,500}{3}x + 100,000$ | IV. $60 \leq x < 70$     |
| E. $y = 500x + 20,000$               | V. $70 \leq x < 90$      |
| F. $y = 35,000$                      | VI. $90 \leq x \leq 120$ |

3. Fill in the missing values for the piecewise function.

A.  $f(50) = 35,000$       B.  $f(20) = 30,000$       C.  $f(90) = 25,000$

4. How can you determine the interval to which a function value belongs when it is at the endpoint of a segment on the graph?

**A point will actually fit in each function definition on either side when it joins the segments, but it is in the domain of the function piece that is closed (defined by  $\leq$  symbol) at the end of the interval on which it is defined at that point.**