

Name: _____

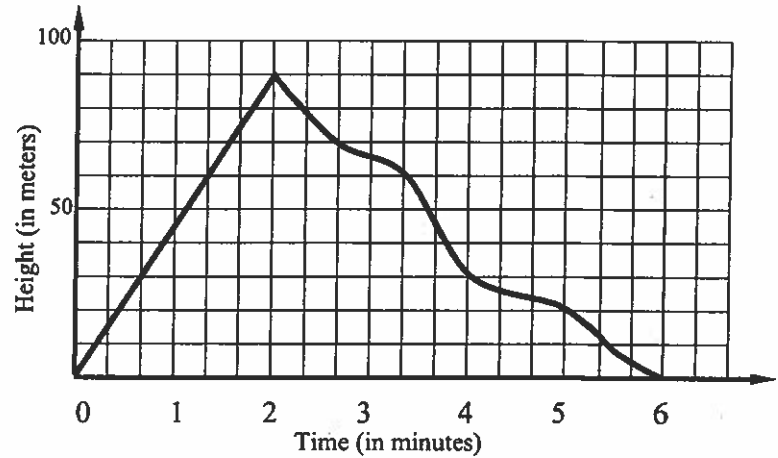
Date: _____

DOMAIN AND RANGE TASKS

1. The following graph represents the height above the ground versus time at a resort as Thomas rides his favorite ski slope.

(a) State the domain and, in your own words, what the domain represents.

(b) State range and, in your own words, what the range represents.

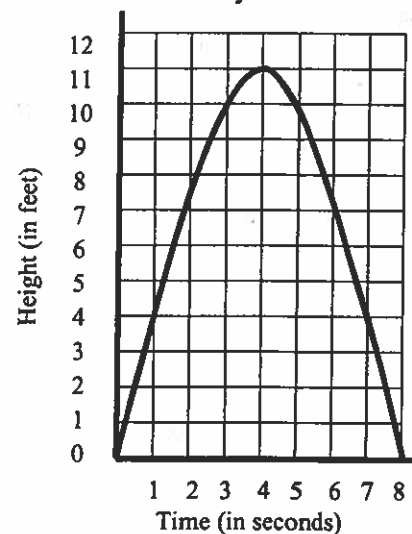


(c) What might Thomas have been doing for the interval $0 \leq t \leq 2$? What was his average rate of change? Use proper units in your answer.

(d) What might Thomas have been doing for the interval $2 \leq t \leq 6$? What was his average rate of change? Use proper units in your answer and compare to what you found in (c).

REASONING

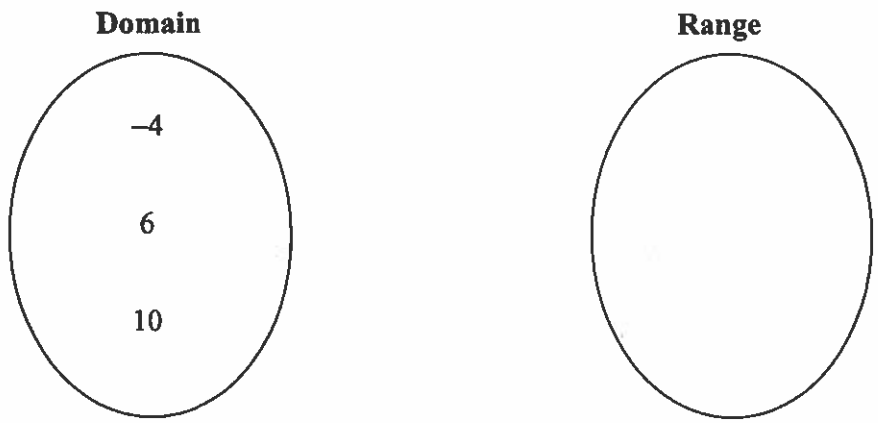
2. The graph below represents the height of a ball over the interval $0 \leq t \leq 8$. After how many seconds was the ball 12 feet off of the ground? Explain your answer.



What does your answer indicate about the **range** of this function?



Exercise #2: Given the function $f(x) = \frac{x}{2} - 3$ and the domain shown below, fill in the range. Write the set in roster notation.



Range: _____

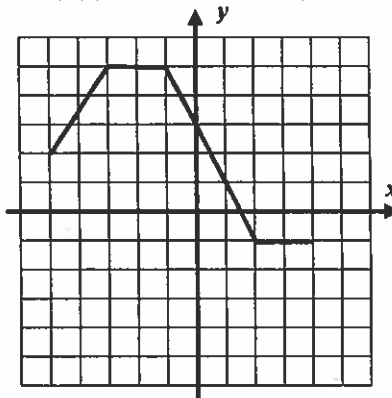
Exercise #3: Which of the following values is *not* in the domain of the function $f(x)$ shown below? Illustrate your thinking by marking points on the graph.

(1) -3

(3) 5

(2) -4

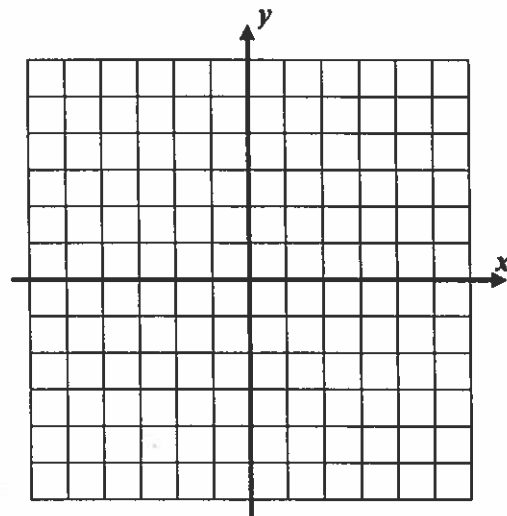
(4) 0



$$f(x) = \begin{cases} \frac{-(x+2)}{2} & -4 \leq x \leq 2 \\ 4x-10 & 2 \leq x \leq 4 \end{cases}$$

Exercise #4: Consider the piecewise linear function given by the formula. Determine the function's range.

Graph $f(-4)$
 $f(2)$
 $f(2)$
 $f(4)$

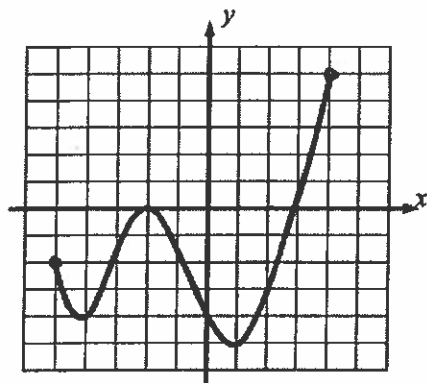


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Domain and Range Quiz

1. In each of the following, state the domain and range; then decide if it's a function or not. Be sure to explain using words such as input, output, domain and range!

(a)



Domain: $\leq x \leq$ _____

Range: $\leq y \leq$ _____

Function (yes/no): _____

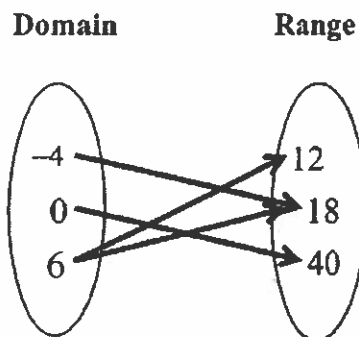
(c) $\{ (7, 4), (2, 9), (4, 6), (8, 1), (8, 5) \}$

Domain : _____

Range : _____

Function (yes/no) _____

(b)



Domain: _____

Range: _____

Function (yes/no): _____

(d)

x	$f(x)$
-4	9
-2	4
0	-5
3	5
6	-4
7	7
8	-10

Domain: _____

Range: _____

Function (yes/no) _____

Evaluate.

2. $f(x) = 6 - 4x$

$f(2) =$

$f(5) =$

3. $g(x) = 2x^2 - 3x$

$g(-3) =$

$g(4) =$

Arithmetic Sequences ~~Quiz Review~~

Date _____ Period _____

Determine if the sequence is arithmetic. If it is, find the common difference. *Write recursive formula*

$$a_n = a_{n-1} + d$$

1) $-23, -20, -17, -14, \dots$

2) $-24, 6, 36, 66, \dots$

3) $-30, -28, -26, -24, \dots$

4) $21, 1, -19, -39, \dots$

5) $-5, 15, 35, 55, \dots$

6) $-15, -23, -31, -39, \dots$

Find the recursive formula. $a_n = a_{n-1} + d$

7) $-6, -15, -24, -33, \dots$

8) $5, -2, -9, -16, \dots$

9) $-20, -12, -4, 4, \dots$

10) $38, 41, 44, 47, \dots$

11) $-5, 2, 9, 16, \dots$

12) $20, 10, 0, -10, \dots$

