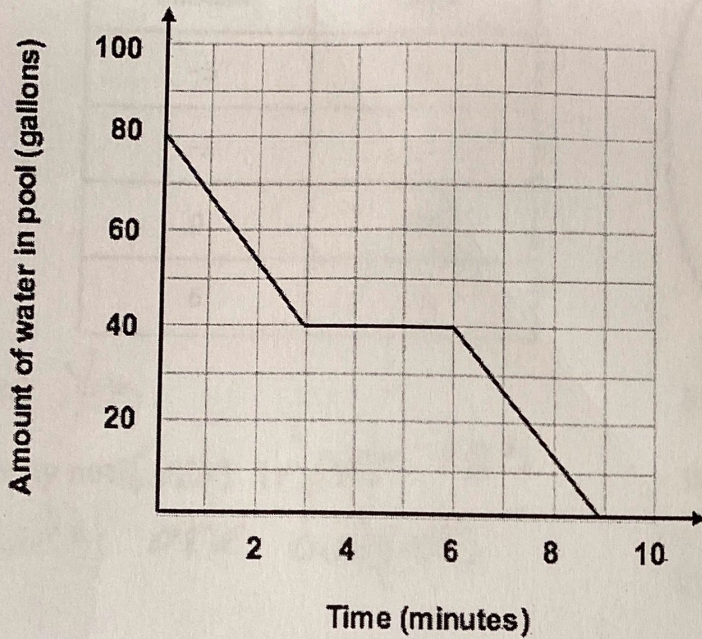


Module 1 DCA, standard F.IF.B.4 Review, page 1

1) Chloe is using a pump to drain the water from her pool. It gets clogged partway through, and she has to clear the clog. The graph represents this situation.



IQ: Time (minutes)

DQ: Amount of water in pool (gallons)

a) Identify the domain and range.

Domain: $0 \leq x \leq 8.8$ ish

Range: $0 \leq y \leq 80$

b) Is the graph discrete or continuous?

continuous

c) Identify the maximum point (write an ordered pair) and explain what it means in the problem situation.

Maximum point:

$(0, 80)$

Explanation:

At 0 seconds (or in the beginning), the pool had 80 gallons of water in it.

d) Is the graph increasing, decreasing, or constant? If it is a mixture of one or more, describe the interval where each occurs.

Decreasing from x of 0 to x of 3.

Constant from x of 3 to x of 6

Decreasing from x of 6 to x of 8.8-ish.

Module 1 DCA, standard F.IF.B.4 Review, page 2

2) Determine whether each relationship represents a function. Explain why or why not.

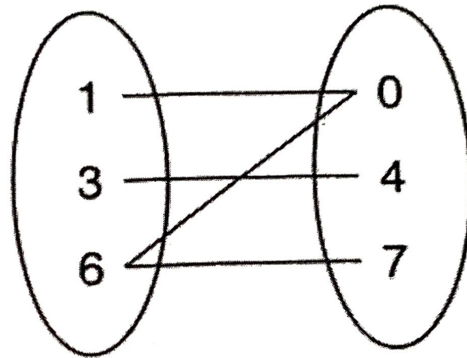
a)

Domain	Range
-5	8
-2	10
0	8
6	15

Function? *Yes.*

Why or why not? *Each input has exactly one output,*

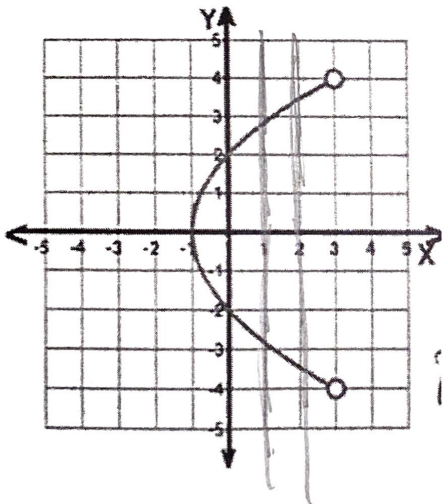
b)



Function? *No.*

Why or why not? *The input of 6 has two different outputs*

c)



for c)

Function? *No.*

Why or why not? *At least one input has more than one output.*

3) Classify each function as increasing, decreasing, or constant. Explain your reasoning.

a) $f(x) = 6$

Increasing, decreasing, or constant?

Constant.

Explanation:

$f(x)$ is always 6.

x	f(x)
-1	6
0	6
1	6

b) $f(x) = 3x + 2$

Increasing, decreasing, or constant?

Increasing

Explanation:

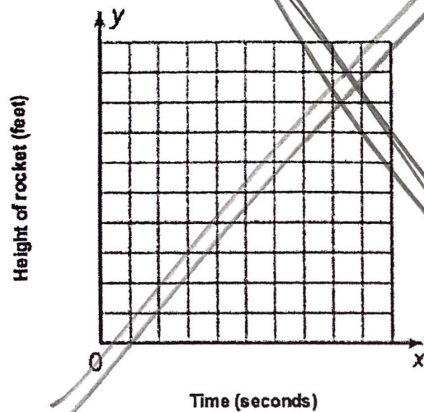
When x increases, y increases

x	y
-1	-1
0	2
1	5

*$3(-1)+2$
 $3(0)+2$
 $3(1)+2$*

Module 1 DCA, standard F.IF.B.4 Review, page 3

4) Sketch a graph of the given situation. Samwise shoots a rocket into the air, and it reaches a height of 120 feet before returning to the ground.



5) Match each function to its graph. Explain your reasoning.

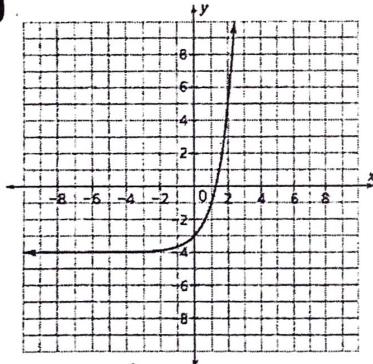
a. $f(x) = \frac{1}{2}x - 3$

b. $f(x) = x^2$

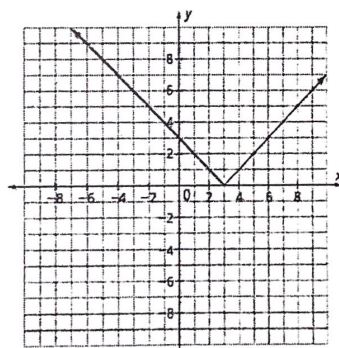
c. $f(x) = 7^x - 4$

d. $f(x) = |x - 3|$

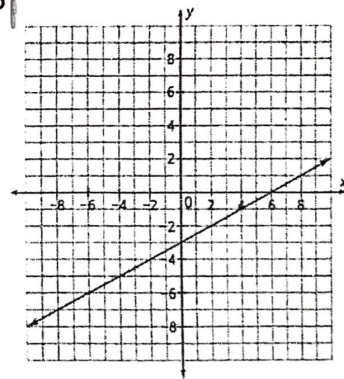
a)



a, b, c, or d?



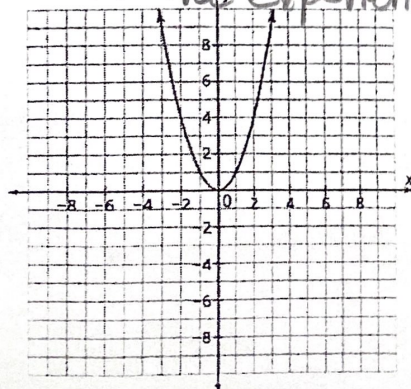
a, b, c, or d?



a, b, c, or d?

Explain your reasoning:

Exponential $\rightarrow x$ is in the exponent



a, b, c, or d?

Explain your reasoning:

Absolute value $\rightarrow x$ inside absolute value symbols.

Explain your reasoning:

Linear $\rightarrow y = mx + b$

Explain your reasoning:

Quadratic $\rightarrow x^2$ $\leftarrow 2$ in exponent