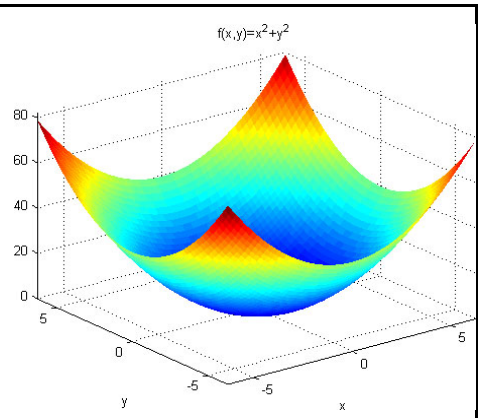
Resource Lesson 1

Features of Functions

For each graph, determine if the relationship represents a function, and if so, state the key features of the function (intervals where the function is increasing or decreasing, the maximum or minimum value of the function, domain and range, *x* and *y* intercepts, etc.)



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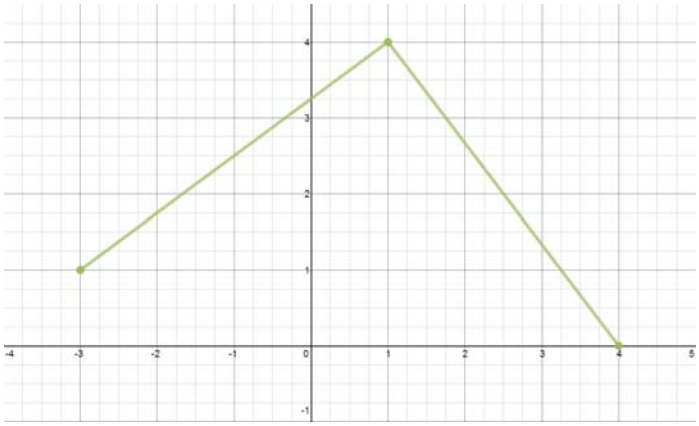

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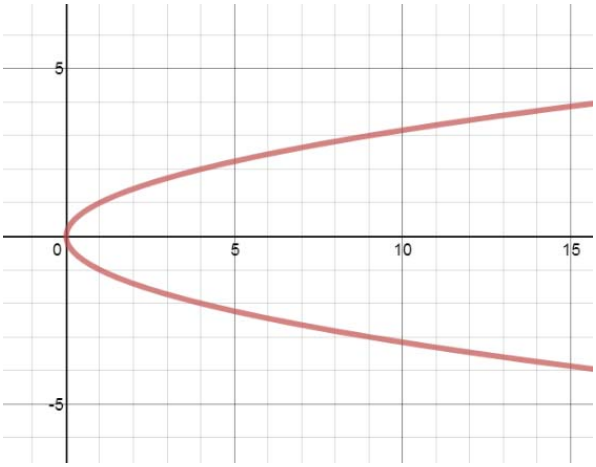

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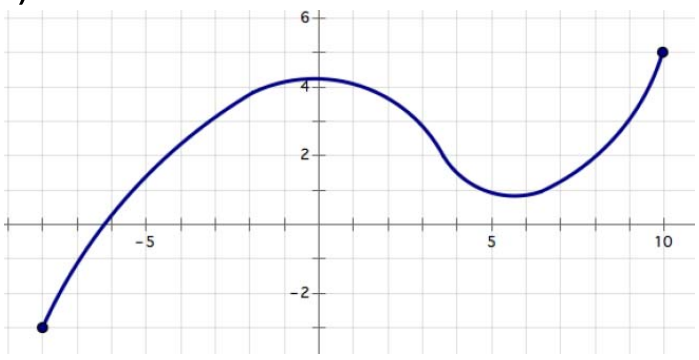

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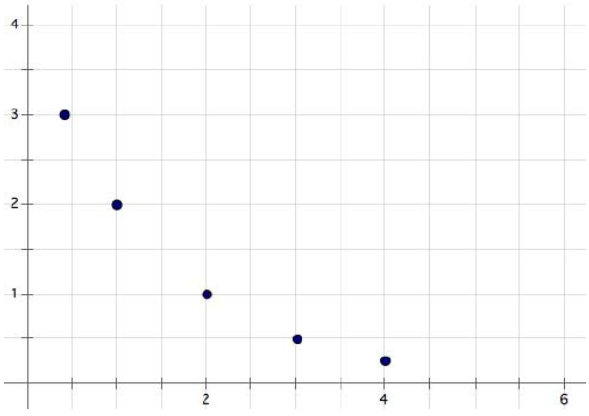

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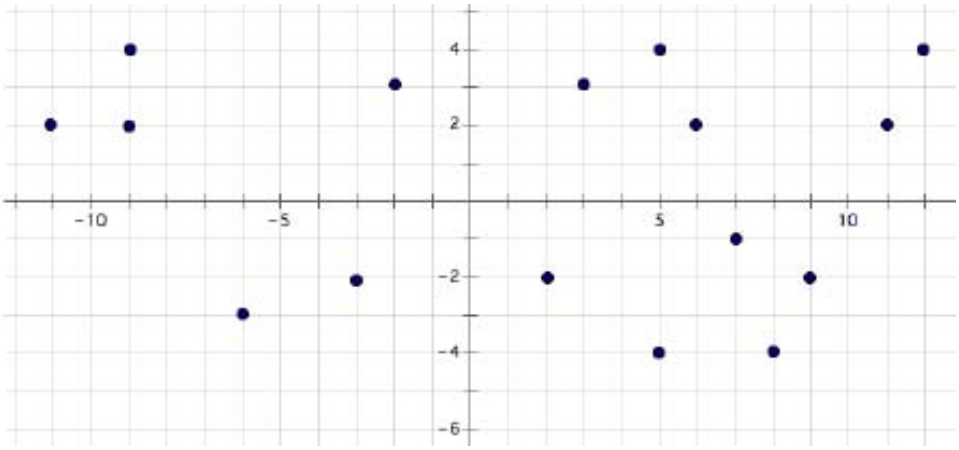

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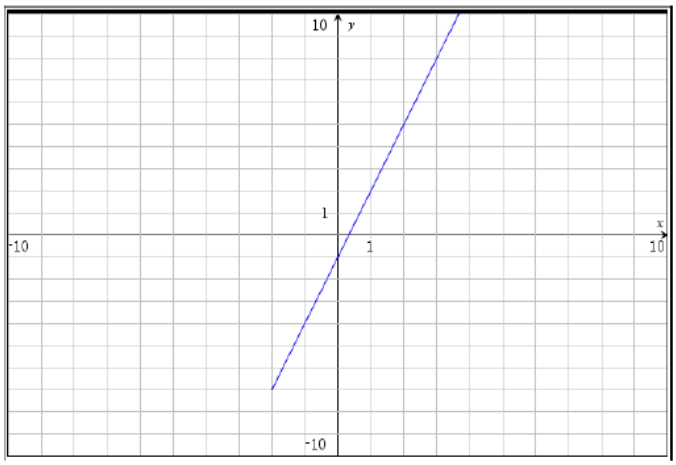

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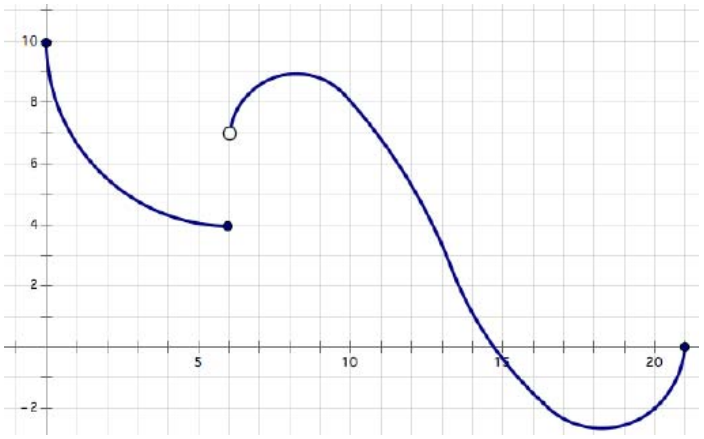


The following represents a continuous function defined on the interval from [0, 6].

x	*f(x)*
0	2
1	-3
2	0
3	2
4	6
5	12
6	20

8. Determine the domain, range, *x* and *y* intercepts.

9. Based on the table, identify the minimum value and where it is located

The following represents a discrete function defined on the interval from [1,5].

x	*f(x)*
1	4
2	10
3	5
4	8
5	3

10. Determine the domain, range, *x* and *y* intercepts.

11. Based on the table, identify the minimum value and where it is located.

Describe the key features for each situation.

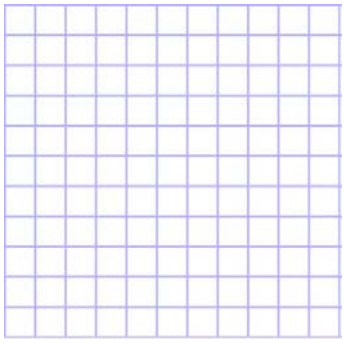
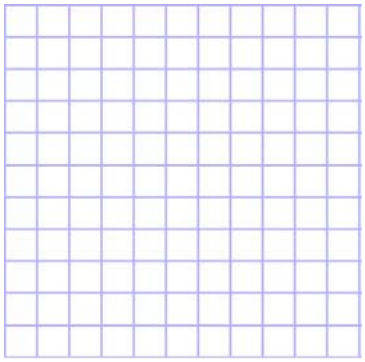
12. The amount of daylight dependent on the time of year.

13. The first term in a sequence is 36. Each consecutive term is exactly 1/2 of the previous term.

14. Marcus bought a $900 couch on a six months, interest free payment plan. He makes $50 payments to the loan each week.

15. The first term in a sequence is 36. Each consecutive term is 1/2 less than the previous term.

16. An empty 15 gallon tank is being filled with gasoline at a rate of 2 gallons per minute.

1) $f(x) = -2x + 4, \ when \ x \geq 0$	**2)** $g(x) = 3^x$
	

Topic: Attributes of linear and exponential functions.
Determine if the statement is true or false, then justify why.

3. All linear functions are increasing.

4. Arithmetic sequences are an example of linear functions.

5. . Exponential functions have a domain that includes all real numbers.

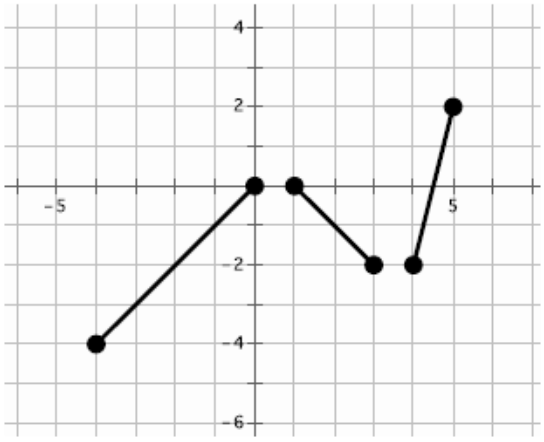
6. Geometric sequences have a domain that includes all integers.

7. The range for an exponential function includes all real numbers.

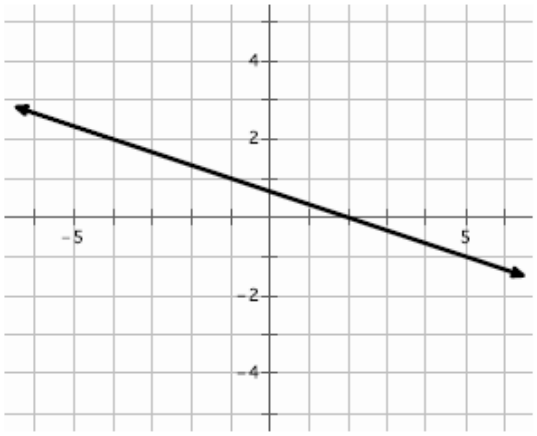
8. All linear relationships are functions with a domain and range containing all real numbers.

For each graph determine the domain of the function, then give the intervals where the function is increasing or decreasing.

9)



10)



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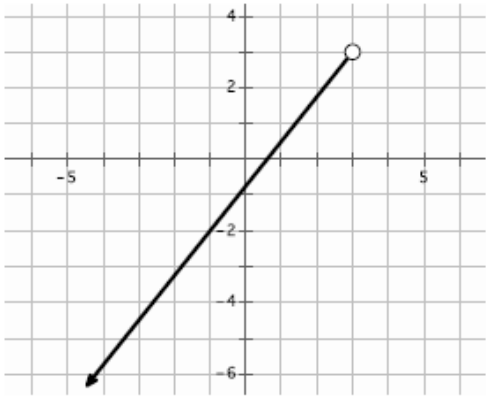

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