

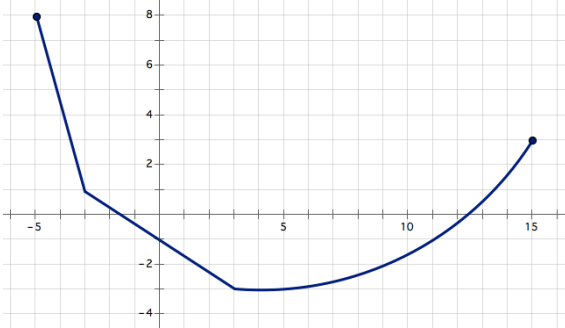
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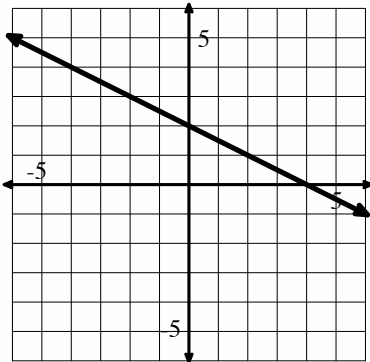
Mod 3 Review

List Key Features of the following functions. Include **domain** and **range**, **increasing** and **decreasing**, **x** and **y intercepts**, and **max** and **min**, and **discrete**, **continuous** or **discontinuous**. *This list will not be provided on the test. You must memorize the key features.*

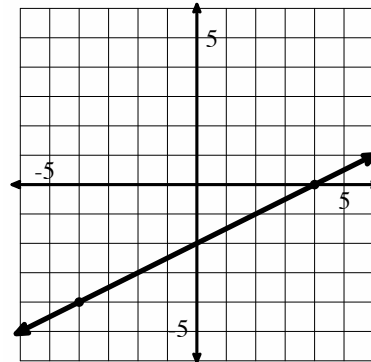
1.



2.



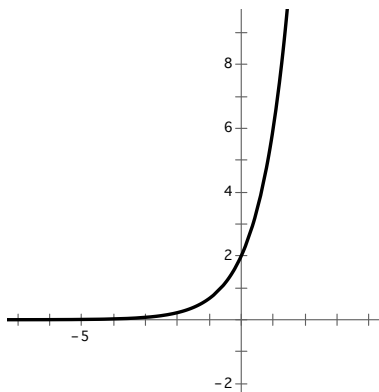
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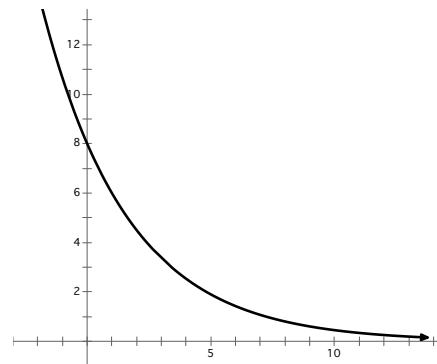
4. What features would every continuous linear function have?

- | | |
|----------------------------|--------------|
| a) Domain: | Range: |
| b) Increasing, decreasing: | y-intercept: |
| c) x-intercept: | Min: |
| d) Max: | |

5.



6.

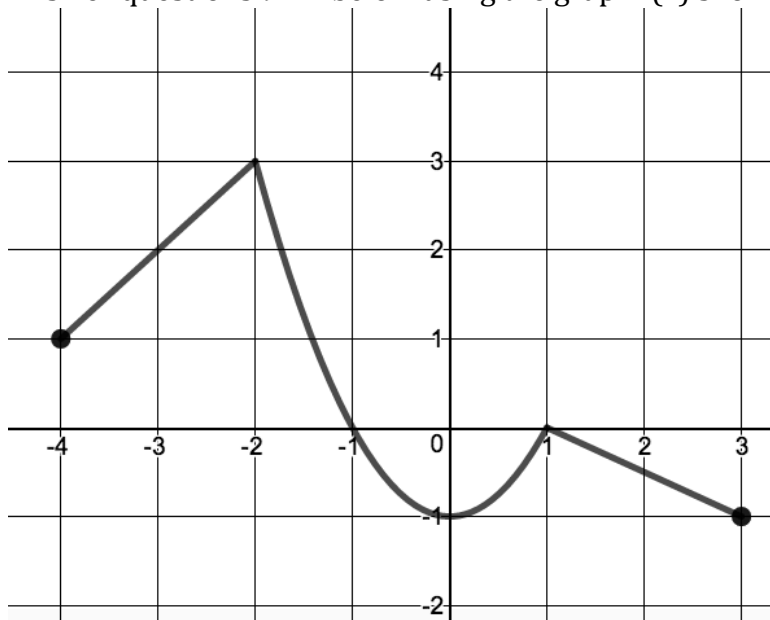


7. What features would every continuous exponential function ($y = br^x$) have?

- | | |
|----------------------------|--------------|
| a) Domain: | Range: |
| b) Increasing, decreasing: | y-intercept: |
| c) x-intercept: | Min: |
| d) Max: | |

8. What are the similarities and differences between continuous linear and exponential functions?

Answer questions 9-17 below using the graph $f(x)$ shown.



9. What is the domain of the graph? (in set notation and interval notation)

10. Find the following values:

a. $f(-3)$

b. $f(0)$

c. $f(1)$

d. $f(-1.5)$

11. Find the x-value for each of the given outputs:

a. If $f(x)=3$, $x=$ _____

b. If $f(x)=0$, $x=$ _____

c. If $f(x)= -1$, $x=$ _____

12. What is the minimum? the maximum?

13. What is happening on the interval $[1, 3]$?

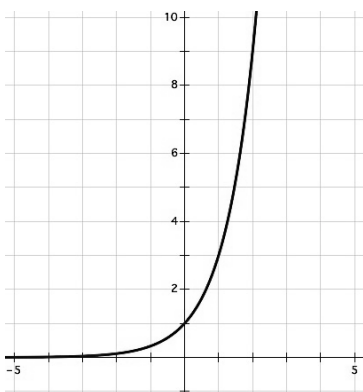
14. On what intervals is the function increasing?

15. List all the intercepts.

16. Over what interval(s) is there a constant rate of change?

17. Is this function continuous, discrete, or discontinuous? How do you know?

18. $g(x)$



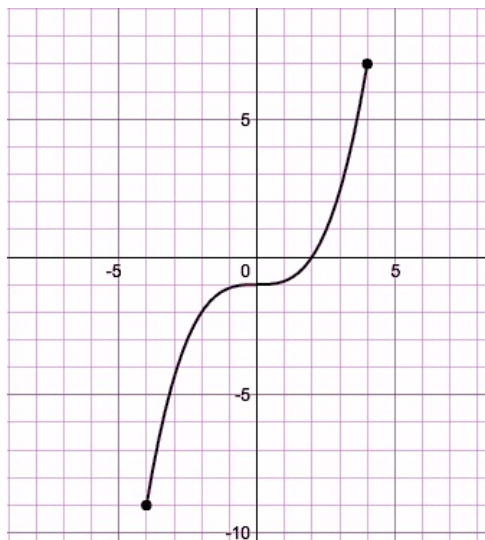
a. $g(2) =$ _____

b. $g(x) = 3$, $x =$ _____

c. $g(0) =$ _____

d. What is the explicit rule for $g(x)$

Answer the following questions using the graph $h(x)$ on below.



19. Find the following values:

- a. $h(2)$
- b. $h(0)$
- c. $h(4)$
- d. $h(-3)$

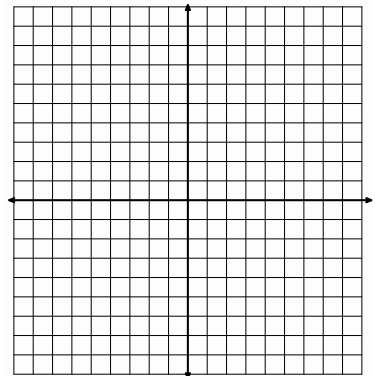
20. Find the x -value for each of the given outputs.

- a. If $h(x) = 1$, $x = \underline{\hspace{2cm}}$
- b. If $h(x) = -2$, $x = \underline{\hspace{2cm}}$
- c. If $h(x) = 7$, $x = \underline{\hspace{2cm}}$
- d. If $h(x) = -9$, $x = \underline{\hspace{2cm}}$

Given the descriptions below, sketch a possible graph of the function. There is more than one possible correct answer.

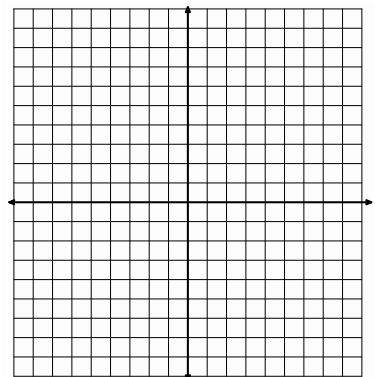
21.

- a. The function has a minimum at -5.
- b. The function has a maximum at 8.
- c. The function has two intervals on which it is decreasing and one interval on which it is increasing.
- d. The Domain of the functions contains all Real numbers from 1 to 9.



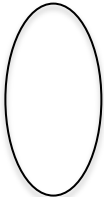
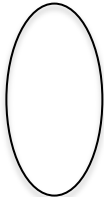
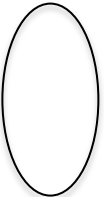
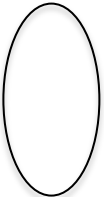
22.

- a. This function is not continuous anywhere.
- b. The function contains only seven elements in its domain.
- c. The values of the domain are between -10 and 2.
- d. The values of the range are between -1 and 3.



23. What is the definition of a function?

Fill out the table below with your own examples and non-examples of functions.

Representation	Example of Function		Counter example	
Table	Input	Output	Input	Output
Set of Ordered pairs				
Map	Input	Output	Input	Output
				
Graph				
Equation				
Context				