

Ready, Set, Go!



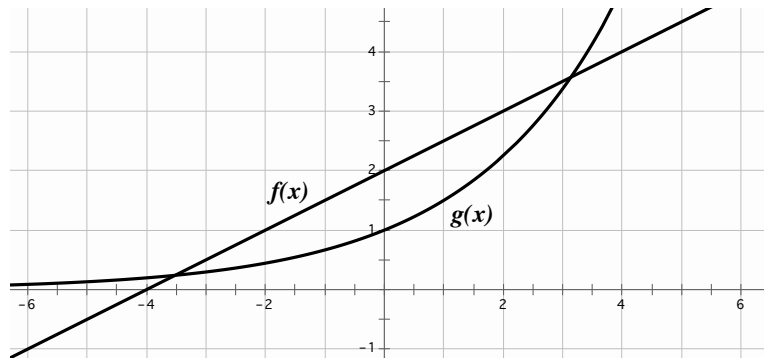
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Ready

1. Give an example of a discrete function.
2. Give an example of a continuous function.
3. The first and 5th terms of a sequence are given. Fill in the missing numbers for an arithmetic sequence. Then fill in the numbers for a geometric sequence.

Arithmetic	-6250				-10
Geometric	-6250				-10

4. Compare the rate of change in the pair of functions in the graph by identifying the interval where it appears that $f(x)$ is changing faster and the interval where it appears that $g(x)$ is changing faster. Verify your conclusions by making a table of values for each function and exploring the rates of change in your tables.



5. Identify the following sequences as linear, exponential, or neither.
 - a. -23, -6.11, 28, ...
 - b. 49, 36, 25, 16, ...
 - c. 5125, 1025, 205, 41, ...
 - d. 2, 6, 24, 120, ...
 - e. 0.12, 0.36, 1.08, 3.24, ...
 - f. 21, 24.5, 28, 31.5, ...



Set

Describe the defining characteristics of each type of function by filling in the cells of each table as completely as possible.

	$y = 6 + 5x$	$y = 6(5^x)$								
6. Type of growth										
7. What kind of sequence corresponds to each model?										
8. Make a table of values	<table style="margin: auto; border-collapse: collapse;"> <tr> <td style="border: none; padding: 0 10px;">x</td> <td style="border: none; padding: 0 10px;">y</td> </tr> <tr> <td style="border-right: 1px solid black; height: 100px;"></td> <td style="height: 100px;"></td> </tr> </table>	x	y			<table style="margin: auto; border-collapse: collapse;"> <tr> <td style="border: none; padding: 0 10px;">x</td> <td style="border: none; padding: 0 10px;">y</td> </tr> <tr> <td style="border-right: 1px solid black; height: 100px;"></td> <td style="height: 100px;"></td> </tr> </table>	x	y		
x	y									
x	y									
9. Find the rate of change										
10. Graph each equation. Compare the graphs. What is the same? What is different?										
11. Find the y-intercept for each function.										
12. Write the recursive form of each equation.										

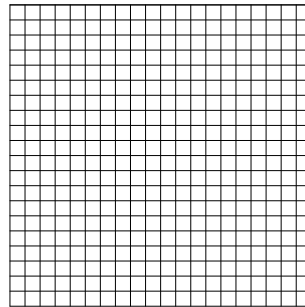
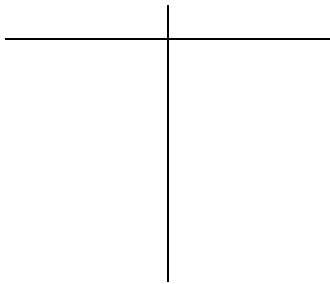


There were 2 girls in my grandmother's family, my mother and my aunt. They each had 3 daughters. My two sisters, 3 cousins, and I each had 3 daughters. Each one of our 3 daughters have had 3 daughters...

13. If the pattern of each girl having 3 daughters continues for 2 more generations (my mom and aunt being the 1st generation, I want to know about the 5th generation), how many daughters will be born then?

14. Write the explicit equation for this pattern.

15. Create a table and a graph describing this pattern. Is this situation discrete or continuous?



Go

Solve the following equations.

16. $5x + 3 = 2(x - 6)$ 17. $6x - 12x + 10 = 2(-3x - 6)$ 18. $13x - 12x + \frac{1}{2} = x + \frac{3}{6}$

**Write the equation of the line in slope-intercept form given the following information.
(P and Q are points on the line)**

19. $f(0) = 6, f(n) = f(n-1) + \frac{1}{4}$ 20. $m = -3, P : (-5, 8)$ 21. $14x - 2y + 9 = 0$

22. $P : (17, -4), Q : (-5, -26)$ 23. $y - 9 = \frac{1}{2}(x + 6)$ 24. $P : (11, 8), Q : (-1, 8)$



Recall the following formulas: Simple interest $i = prt$ Compound interest $A = P(1+r)^t$

Using the formulas for simple interest or compound interest, calculate the following.

25. The simple interest on a loan of \$12,000 at an interest rate of 17% for 6 years.

26. The simple interest on a loan of \$20,000 at an interest rate of 11% for 5 years.

27. The amount owed on a loan of \$20,000, at 11%, compounded annually for 5 years.

28. Compare the interest paid in #26 to the interest paid in #27. Which kind of interest do you want if you have to take out a loan?

29. The amount in your savings account at the end of 30 years, if you began with \$2500 and earned an interest rate of 7% compounded annually.

