

Name: Key

Block _____

1. Which function has a greater rate of change between [0, 2]?

Function D

Function C		Function D
Year	Portfolio Balance	The amount of money in a certificate of deposit doubles every year. Jose originally invested \$500. $y = 500(2)^x$ $(0, 500)$ $(2, 2000)$ $\frac{2000 - 500}{2 - 0} = 750$
0	\$30	
1	\$120	
2	\$480	
3	\$1,920	

$$\frac{480 - 30}{2 - 0} = \frac{450}{2} = 225$$

2. Which function has a smaller rate of change between [1, 3]?

Function A

Function A	Function B										
$a_n = 30n + 20$ 30	<table border="1"> <thead> <tr> <th>Bag</th> <th>Number of Skittles</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>75</td> </tr> <tr> <td>2</td> <td>125</td> </tr> <tr> <td>3</td> <td>175</td> </tr> <tr> <td>4</td> <td>225</td> </tr> </tbody> </table>	Bag	Number of Skittles	1	75	2	125	3	175	4	225
Bag	Number of Skittles										
1	75										
2	125										
3	175										
4	225										

3. Which function has a smaller y-intercept?

Function F

Function E	Function F
$a_n = 5n + 1$	$a_n = -3\left(\frac{1}{3}\right)^t$ (-3)

Determine if Linear, Exponential, or Quadratic

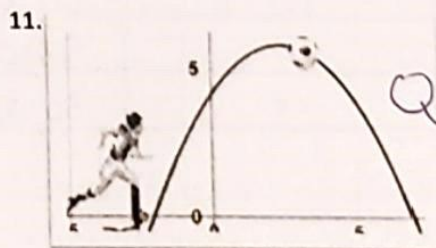
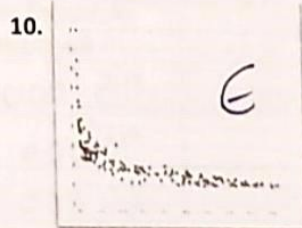
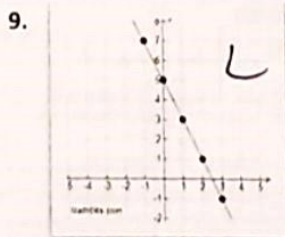
4. $f(x) = 4(x+9)^2 - 12$ Q

5. $2x + 3y = 10$ L

6. $y = 2x^2 - 8x + 21$ Q

7. $f(x) = 3(2)^{x-1} + 4$ E

8. $f(x) = 12x - 6$ L



Write an equation that would model the table of values given

12.

$$y = \frac{1}{4}(2)^x$$

x	2	3	4	5	6
y	1	2	4	8	16

13.

$$y = -1.5x - .5$$

x	-6	-5	-4	-3	-2	-1	0
y	8.5	7	5.5	4	2.5	1	-0.5

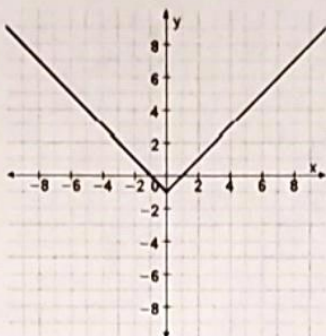
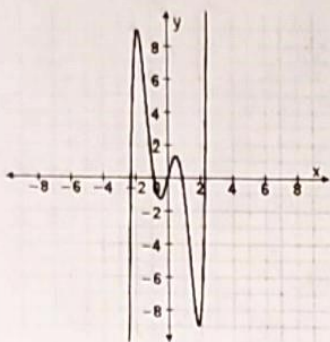
Determine if the following functions are even, odd or neither.

14. N

15. E

16. O

17. N



$$f(x) = -2x^5 + 5x^3 - x$$

$$g(x) = 2x^3 + 3x - 1$$

Scenario: Two friends, Fred and Barney, just purchased a dinosaur for \$100,000. They cannot agree on how to pay off their loan. After paying \$20,000 to the Bedrock Dinosaur Dealership, they decide to compare each other's pay-off plans before making a decision.

Fred's Plan: \$80,000 remaining on the loan, reducing the loan by \$5,000 each month

Barney's Plan: \$80,000 remaining on the loan, reducing the loan by 25% each month

Fred's Plan

18. Write a model for the situation. (4 points)

$$y = 80000 - 5000x$$

20. Make a table of values for the data.

Month	Amount of Loan Remaining
1	75,000
2	70,000
3	65,000
4	60,000
5	55,000
6	50,000

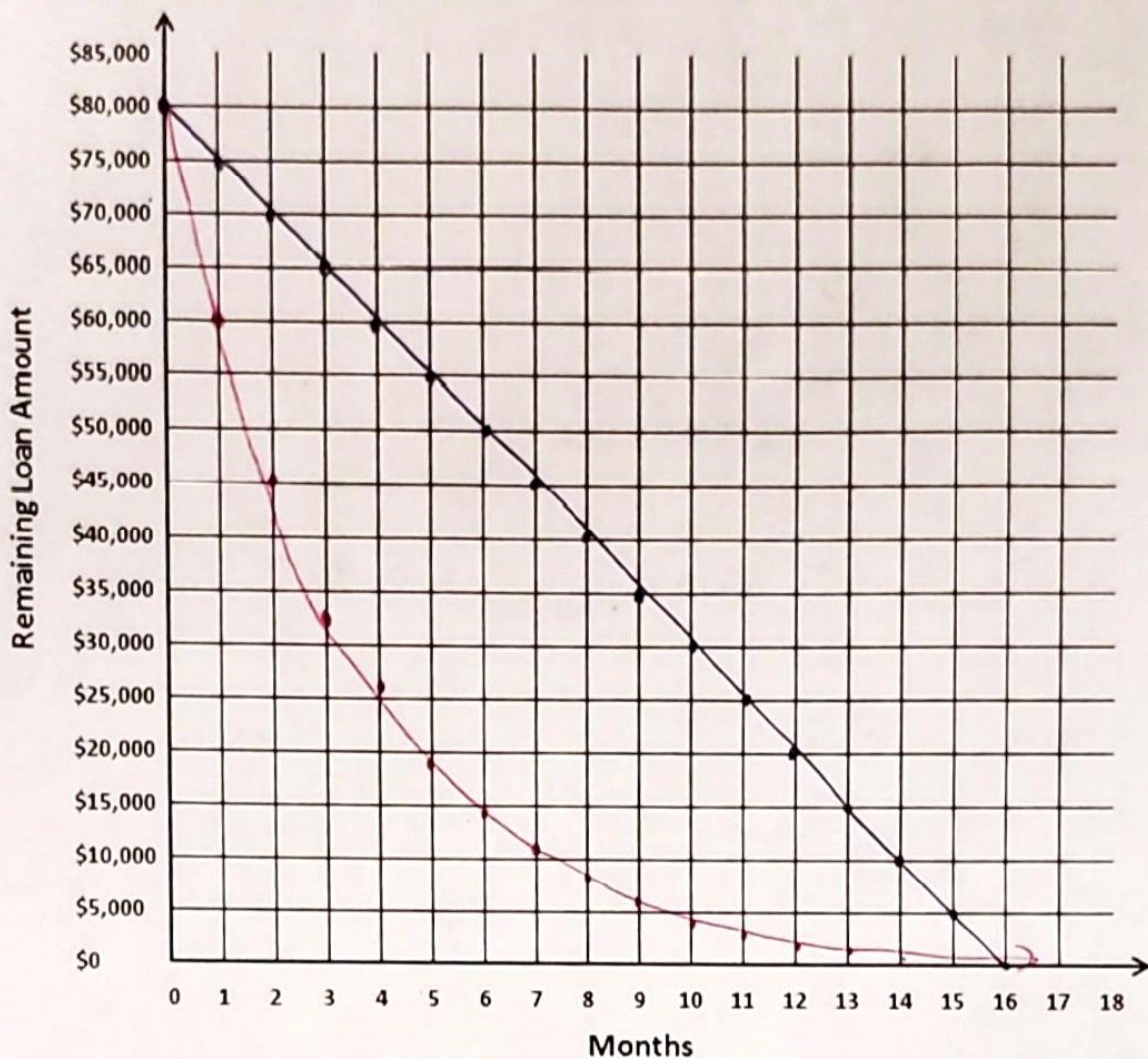
Barney's Plan

19. Write a model for the situation. (4 points)

$$y = 80000(.75)^x$$

21. Make a table of values for the data.

Month	Amount of Loan Remaining
1	60,000
2	45,000
3	33,750
4	25,312.50
5	18,984.38
6	14,238.28



29. At ten months, how much will Fred's plan have left remaining?

\$30,000

30. At ten months, how much will Barney's plan have left remaining?

\$4,500

31. Which friend's plan has a greater average rate of change between [0, 3]?

FRED (-5000)

BARNEY (-15,416.67)

(9,8000) (3,33750)
 $\frac{80000 - 33750}{0 - 3}$

32. At what month will the two friend's plans have about the same amount remaining?

16

33. Which friend's plan will have the loan paid off faster? Briefly explain how you decided this.

FRED, he actually gets to \$0 paid off and Barney will always have a small amount left