

Free Response:

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

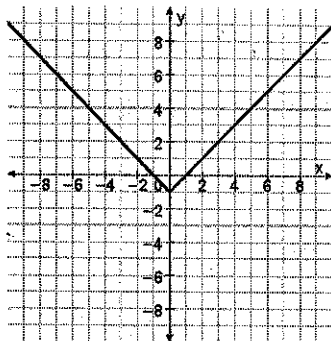
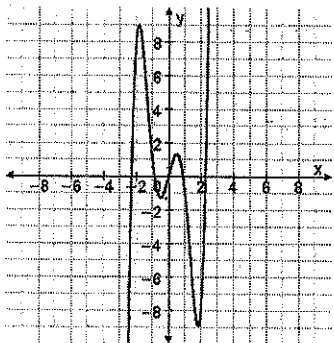
4 PTS EACH

16. _____

17. _____

18. _____

19. _____



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

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

Performance Task :

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		Barney's Plan	
20. Write a model for the situation. (4 points) $80000 - 5000x$		21. Write a model for the situation. (4 points) $80000(1 - \frac{.25}{12})^{12x}$	
22. Make a table of values for the data.		23. Make a table of values for the data.	
Month	Amount of Loan Remaining	Month	Amount of Loan Remaining
1	75,000	1	62,139.74
2	70,000	2	48,266.84
3	65,000	3	37,491.11
4	60,000	4	29,121.10
5	55,000	5	22,619.72
6	50,000	6	17,569.79
24. What is the rate of change for Fred's plan? -5000			

25. What is the rate of decay for Barney's plan?

25%

26. How much does Fred's plan predict the friends will have left to pay on the 9th month?

\$35,000

27. How much does Barney's plan predict the friends will have left to pay on the 12th month?

\$3858.72

28. How much does Barney's plan predict the friends will have left to pay on the 15th month?

\$1808.35

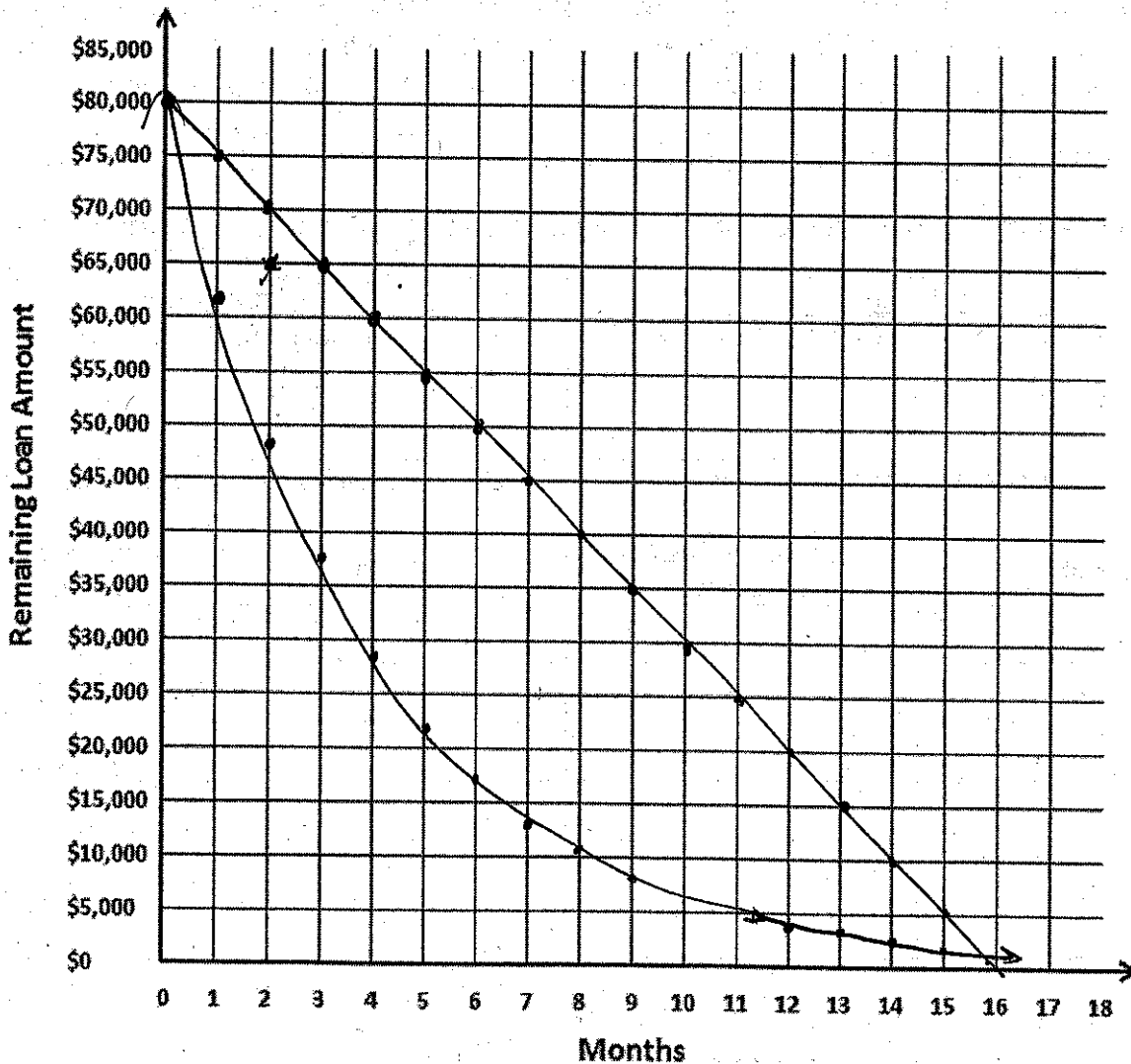
29. What is the y-intercept for each function?

Fred's Plan: 80,000

Barney's Plan: 80,000

30. (6 points) Graph the data for each plan and label each graph accordingly.

Helpful Hint: Use the formula to graph up to month 17.



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

\$ 30,000

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

\$ 6,395.65

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

(0, 80000) (3, 65000)

$$\frac{80000 - 65000}{0 - 3} = -5000$$

(0, 80000) (3, 37491.11)

$$\frac{80000 - 37491.11}{0 - 3} = -14,169.63$$

BARNEY CHANGED FASTER

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

AT ABOUT 16 MONTHS

35. (4 points) Which friend's plan will have the loan paid off faster? Briefly explain how you decided this. ~~BARNEY~~

Given the following functions, evaluate for the indicated value.

$f(x) = x + 2$

$g(x) = \frac{1}{2}x + 1$

$h(x) = 2x^2 - 3$

$k(x) = 3 - x$

36) $f(5) =$ _____

37) $g(8) =$ _____

38) $h(3) =$ _____

39) $k(10) =$ _____

Use the graph to find the indicated values.

40) $h(3) =$ _____

41) $h(8) =$ _____

42) $h(2) =$ _____

43) $h(\text{_____}) = 5$

44) $h(\text{_____}) = 0$

45) $h(10) =$ _____

