

MOST IMPORTANT

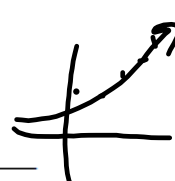
3. Did the student evaluate (predict) and solve for a value of one of the polynomial regressions.

Which two regressions did you pick? exponential and cubic
 What value are you plugging in for x 2016 or relevant (explain why)
 What y-values did you get? 100 and 120 billion of dollars
 What y value are you predicting? \$1 (y2=value use intersection)
 What x-values did you get? 2025 and 2017

Make two different sets of predictions.

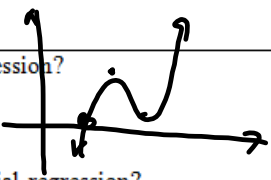
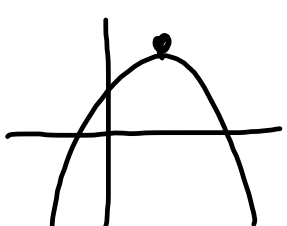

people like choices- want a spread

4. What is the end behavior for the polynomials?
 Which regressions did you pick? exponential
 What is the left end behavior? 0 Right end? $+\infty$



5. Did the student find the zero for the cubic regression?
 Did the student find the extrema for a polynomial regression?

Quad
Quint

required!!!

6. Did the student find the exponential regression's rate of growth or decay. (Find $\ln(b)$ and write as percent)

$$\ln b = -.15$$

Which is it? Growth(b is positive) or Decay(b is negative)

15% decay

do exp regression...

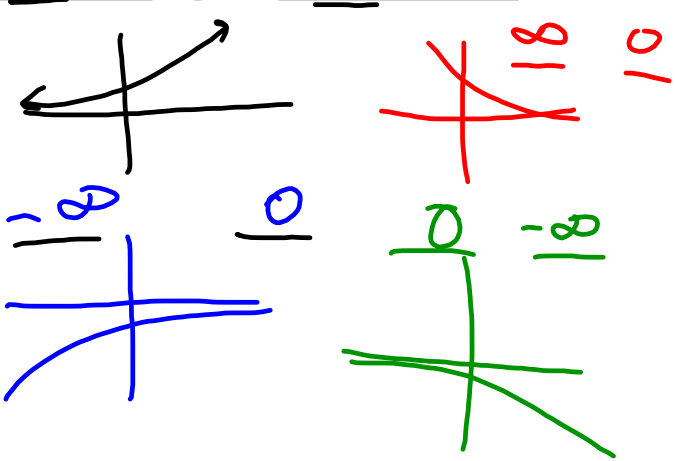
a= b= some number

7. Where is the asymptote for the exponential regression? (calculator uses only $y=0$, but you may want another)

What is the end behavior for the exponential?

What is the left end behavior? 0 Right end? ∞

$$y = 0$$



8. Did the student discuss the asymptote, domain, and range for LNREG?

Asymptote: $X=0$ (unless you move it)

Domain: $(0, \infty)$

Range: $(-\infty, \infty)$

sinreg 1,L1,L2, period

(is a number (highest x -lowest x)/2)

9. Did the student find the period, Amplitude, and phase shift for the sine regression?

Sin reg a= 1 b= 2 c= 3 d= 4

Amplitude: (|a|) 1

Period: $(2\pi/b)$ $\pi = 3.14, \dots$

Phase Shift $(-c/b)$ $-3/2$

Raised: (d) 4

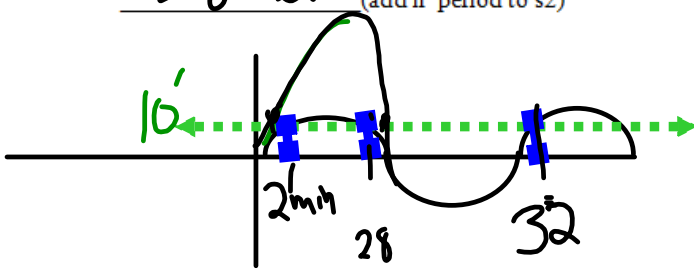
MAKING A PREDICTION

10. Did the student find all the solutions to a regression value just above or below the extrema?

Value desired: (y_2) 10 Period: 30 mins (see #9)

2 distinct solutions: (intersection method) s_1 : 2 min s_2 : 28 min

All solutions $2 + 30n$ (add $n \cdot \text{period}$ to s_1)
 $28 + 30n$ (add $n \cdot \text{period}$ to s_2)



$y_1 = \sin \text{ reg}$
 $y_2 = 10$
 Calc 5: Intersect

1 st : y_1	y_1
2 nd : y_2	y_2
Guess: 0	25
$x = 2$	28

Odd/Even function identities:

ODD	EVEN	ODD
$\sin(-u) = -\sin(u)$	$\cos(-u) = \cos(u)$	$\tan(-u) = -\tan(u)$
$\csc(-u) = -\csc(u)$	$\sec(-u) = \sec(u)$	$\cot(-u) = -\cot(u)$

EVEN

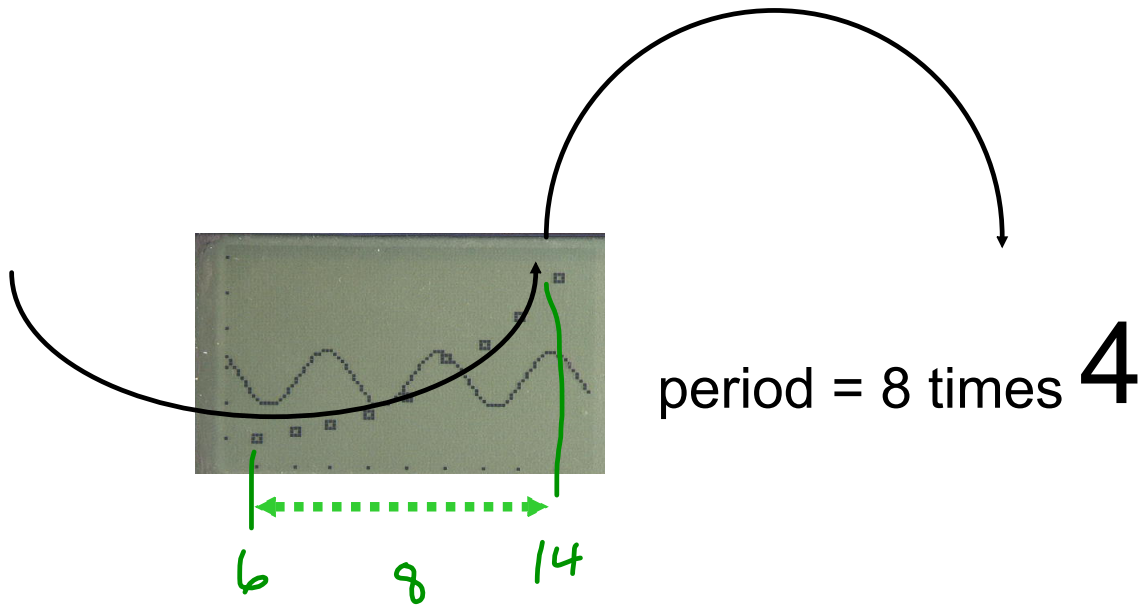
$$y = x^2$$

$$y(-x) = (-x)^2 = x^2$$

ODD

$$y = x^3$$

$$y(-x) = (-x)^3 = -x^3$$



$$\sin(x+y) = \sin x \cos y + \cos x \sin y$$

$$\sin(2x) = 2 \sin x \cos x$$

$$\cos(x+y) = \cos x \cos y - \sin x \sin y$$

$$\cos(2x) = \cos^2 x - \sin^2 x$$

Exciting

$$\cos(2x) = 1 - 2\sin^2 x$$