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NAME	Section
NAIVIL	SECTION

14.X – QUADRATIC REGRESSION PLEASE COMPLETE AND TURN IN ALL FOUR PAGES!

Online resource:

www.algebralab.org >>> Word Prob >>> Quadratics Eqations >>>

Word Problems: Quadratic Regression

Example 1:

Cedar point is testing the price-profit of their cold soda in vending machines. Here is the price- profit data taking into account the costs of the soda, delivery and all other expenses for 1 week.

Price	\$1.00/soda	\$2.50	\$4.00	\$5.50	\$7.00
Profit	\$1000	\$2000	\$10,000	\$2500	\$0

Profit	\$1000	\$2000	\$10,000	\$2500	\$0	
In word	ds, describe why this pa	attern seems to b	be happening			
						- -
	your calculator, can fine to the nearest tenth.	d the standard fo	orm of the quadra	tic y =		_
	an appropriate graph be propriately. Draw a rou	•			_	is. Label x and y-
Using t made.	the calculator, find the	price (to the nea	rest penny) you s	hould charge ar	nd identify the	amount of profit
	PRICE		PROFIT			
Using t	the calculator, find the	zero (break ever	n points) for the re	egression line		
	ZERO (left)		ZERO (lef	t)		
Based o	on the r-value and the	graph, how do y	ou feel about the	regression line	?	

Example 2:

According to CDC data ($\underline{www.cdc.gov}$) here are U.S. Measles cases per year for a select set of years that could produce a quadratic graph

Year	2011	2012	2013	2014
Cases (est.)	205	45	195	625

In words, describe what seems to be happening	
Using your calculator, can find the standard form of the quadratic $y = $	
Make an appropriate graph below. Use you table to label a dot for each mark along the x-axis. I axis appropriately. Draw a rough sketch of the points in the table AND the line.	abel x and y
Using the calculator, find the lowest number of Measles cases and the approximate year.	
CASES YEAR	
Using the calculator, find the projected number of measles cases in 2015.	
2015	
Based on the r-value and the graph, how do you feel about the regression line?	
Create a negative critique for using the quadratic regression for this data.	

Homework: Problem 1:

Wings Stadium is testing the price-profit of their concert tickets. Here is the price- profit data taking into account the costs of the talent, support staff and all other expenses for 5 shows.

Ticket Price	\$25	\$35	\$50	\$60	\$75
Profit	\$15,000	\$25,000	\$75,000	\$60,000	\$30,000

In words, des	cribe why	this pattern se	eems to be ha	ppening			
Using your ca Round to the			andard form o	of the quadratic	y =		
				o label a dot for onts in the table		he x-axis. Label x and	d y-
Using the calo	culator, fin	nd the price (to	o the nearest _l	penny) you sho	uld charge and iden	ntify the amount of pr	ofit
PRICI	Е _			PROFIT			
Using the cald	culator, fin	nd the zero (br	eak even poi	nts) for the regr	ression line		
ZERO) (left) _			ZERO (left)			
Based on the	r-value an	nd the graph, h	now do you fe	eel about the re	gression line?		

Homework: Problem 2:

According to CDC data back in 2003 (<u>www.cdc.gov</u>) here are estimated number of Aids cases for 1999 though 2003

Year	1999	2000	2001	2002	2003
Cases (est.)	41,350	41250	40,850	41,300	43,200

Using your calculator, can find the standard form of the quadratic $y = $	
Make an appropriate graph below. Use you table to label a dot for each mark along the x-axis. Label a axis appropriately. Draw a rough sketch of the points in the table AND the line.	x and y
Using the calculator, find the lowest number of AIDS cases and the approximate year.	
CASES YEAR	
Using the calculator, find the projected number of measles cases in 2006.	
2006	
Based on the r-value and the graph, how do you feel about the regression line?	
Create a negative critique for using the quadratic regression for this data.	