Nar		Algebra 2E		1	Per:	Date:		
3B		Transitioning from Vertex to Intercept Form Transition from Vertex Form to Intercept Form						
Wh	y we lo	C(assw)						
	2E p make a depart	lus you'll make s as much profit, b		ot sure ho people w your Pro	w much to cha on't buy it. Y fits, in p dollar	arge for it. If it's to ou talk to Mr. Kas s, as a function of	oo cheap, you w se in the business	von't
			p(c) =	-20(<i>c</i> -	$(35)^2 + 12,50$	00		
a.	What	is the range of o	ur potential profits?	b.	What price fo	r the game maxim	nizes our profit?	
c.	What	is our profit if w	e charge \$20?	d.	What is our	profit if we charge	≥ \$75?	
Try i	to do t	hese without act	ually evaluating or solv	ing:				
e.		it for \$25 would as selling it at wh				uating, what would for \$33 or \$38?		
f.	Can a	1\$ change in pric	e make that big of a di	fference?	What's the ch	ange in profits be	tween selling it f	or
	:	\$12 vs. \$13?		. \$22 vs. 2	23?	\$34 vs \$	35?	
						* *		
g.	How n approx	nuch could we se timate the decim	II our product for if we al because, really, who	e want to talks abou	profit \$6,000? ut money in ra	(Give exact radi dicals?)	ical answers an	nd then

	me: rafino · Algebra 2E	Per: Date:			
(A)	B Transitioning from Vertex to In	ntercept Form	5 4		
	Transition from Vertex Form to Intercept Form Classwork Why we love vertex form				
1.	1. You and a friend decide to make an Algebra 2E Board Game to help future generations learn and study Algebra 2E plus you'll make some money. You're not sure how much to charge for it. If it's too cheap, you won't make as much profit, but if it's too expensive, people won't buy it. You talk to Mr. Kase in the business department, who figure out how to maximize your Profits, in p dollars, as a function of what we could charge for the game, in c dollars: $p(c) = -20(c-35)^2 + 12,500$				
a.	What is the range of our potential profits?	b. What price for the game maximizes our profit?			
c.	What is our profit if we charge \$20?	d. What is our profit if we charge \$75?			
Try	to do these without actually evaluating or solvin	ng:			
e.	Selling it for \$25 would yield the same profit as selling it at what other price?	f. Without evaluating, what would yield more properties of the game for \$33 or \$38? Justify your reason.			
f.	Can a 1\$ change in price make that big of a diffe	erence? What's the change in profits between selling it	for		
	\$12 vs. \$13? \$	\$22 vs. 23?\$34 vs \$35?			
g.	How much could we sell our product for if we approximate the decimal because, really, who to	want to profit \$6,000? (Give exact radical answers a alks about money in radicals?)	and then		
_		Constant to the second			
h.	What interval of prices we should we consider if	t we want to make sure you make a profit?			
		*	dividencione chase sales		

2.	Your friend suggests it may make more sense to sell two versions of the game: a Midterm & Final Edition.
	Good old Mr. Kase runs the math again and brings back two new profit functions, this time in intercept form:

$$m(c) = -40(c - 10)(c - 25)$$
 $f(c) = -70(c - 20)(c - 60)$

a. What price intervals for each board game to keep your profits positive?

Midterm Edition:

Final Edition:

b. What board game price will maximize your profits for each game?

Midterm Edition:

Final Edition:

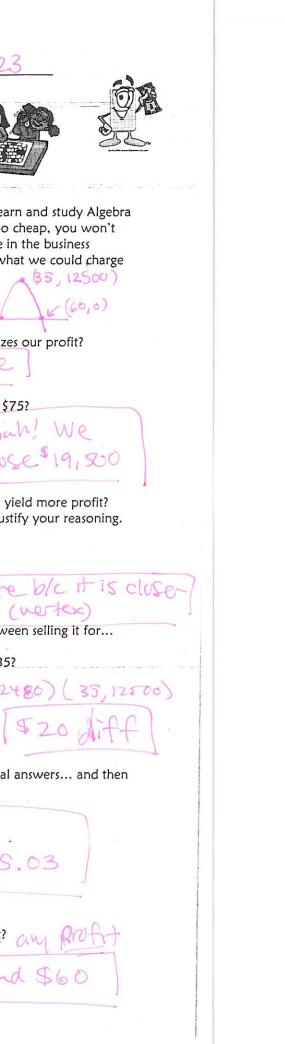
c. What is the most amount of money you could make with the Midterm & Final Edition, combined, for the year?

d. You and your partner disagree on how many games to offer and what to charge for them. You just want to produce the full-year edition, and want to charge \$50 for it. Your friend says, "Let's just make the two editions and charge \$22.50 for the Midterm Edition and \$22.50 for the Final Edition. That way they're spending the same amount and we're making more, in the long run."

Whose idea earns higher profits?

If equal, state what your profit will be. If one is less or more, state how much.

Name:	Answer key Per: 1 Date: 11/23					
The state of the s	Algebra 2E					
3B	Transitioning from Vertex to Intercept Form					
Why we	Transition from Vertex Form to Intercept Form Classus 4 Howe work love vertex form					
•						
2E make depar	and a friend decide to make an Algebra 2E Board Game to help future generations learn and study Algebra plus you'll make some money. You're not sure how much to charge for it. If it's too cheap, you won't as much profit, but if it's too expensive, people won't buy it. You talk to Mr. Kase in the business the threat the threat who figure out how to maximize your Profits, in p dollars, as a function of what we could charge se game, in c dollars: $p(c) = -20(c-35)^2 + 12,500$					
	t is the range of our potential profits? b. What price for the game maximizes our profit?					
OKPE	2500 More than 0, \$35 pergame at most \$12,500					
	t is our profit if we charge \$20? d. What is our profit if we charge \$75?					
	=8000 [\$8,000] p(75) =-19,500 [Gah! We					
Try to do	these without actually evaluating or solving:					
	f. Without evaluating, what would yield more profit? Selling it at what other price? Selling the game for \$33 or \$38? Justify your reasoning.					
\$2: So	5 is 10 less than \$35. 33 6 35 38 15 45 \$33 would be more blc it is closed					
	to the max (vertex)					
f. Can a	1\$ change in price make that big of a difference? What's the change in profits between selling it for					
	\$12 vs. \$13? \$22 vs. 23?\$34 vs \$35?					
1	20) (13,2820) (22,9120) (23,9620) (34,12480) (35,12500)					
(\$ 900 diff) (\$500 diff) \$20 diff						
appro	much could we sell our product for if we want to profit \$6,000? (Give exact radical answers and then eximate the decimal because, really, who talks about money in radicals?)					
	$(x-35)^2+12500=6000$ [we could sell it for $(x-35)^2=-6500$					
	$(x-35)^2=325$ \$16.97 or \$55.03					
	$x = 35 \pm \sqrt{325}$					
	interval of prices we should we consider if we want to make sure you make a profit?					
_	20(x-35)2+12500>0 Between \$10 and \$60					
	X=35±1625					



Good old Mr. Kase runs-the-math-again and-brings	back two new profit functions, this time in intercept form:				
m(c) = -40(c - 10)(c - 25)	f(c) = -70(c - 20)(c - 60)				
a. What price intervals for each board game to keep your profits positive?					
Midterm Edition:	Final Edition:				
Between \$10 and \$25	Between \$20 and \$60				
b. What board game price will maximize your pro	offits for each game?				
Midterm Edition:	Final Edition:				
10+25 = \$17.50	20160 = \$40				
year?	make with the Midterm & Final Edition, combined, for the				
Max of midterm	Twe could make				
m(17.50) = 2250	Twe could make \$30,250!				
max of final	4 30 , 230 !				
f (40) = 28000					
You just want to produce the full-year edition, a Your friend says, "Let's just make the two edition	mes to offer and what to charge for them. (1) 10 / 10 / 10 / 10 / 10 / 10 / 10 / 10				
Whose idea earns higher profits? Mine	, obvi!				
If equal, state what your profit will be. If one is	less or more, state how much. My Idea Male				
my idea!	S Friend's idea moi				
f(50)=-70(50-20)(50-66)	m(22.5)= 1250				
= 21,000	} f(22.5) = 6562.5				
·	= 7812.5				

2. Your friend suggests it may make more sense to sell two versions of the game: a Midterm & Final Edition.