

\*\*\*\*\*DO NOT WRITE ON THIS PAGE!!!\*\*\*\*\*

T-Shirt Task

Ms. Shaw's 8<sup>th</sup> grade class is taking a field trip. The principal has agreed to buy t-shirts for everyone going on the field trip so that everyone can dress alike. Each person's t-shirt will have the school logo on the front, and that person's name on the back. Ms. Shaw has found two companies that can make the t-shirts. The costs are listed in the table below.

<i>Item</i>	<i>Company A</i>	<i>Company B</i>
T-shirt and logo (without the name)	\$5.75 each	\$5.65 each
Letters on the back	3 letters cost \$0.63	4 letters cost \$0.88

Andrea and Lexus, two students in Ms. Shaw's class, are arguing over whether Company A or Company B has the best price on the t-shirts. Andrea believes that Company A will be cheaper because the cost per letter is cheaper. Lexus believes that Company B will be cheaper because the cost of the t-shirts is cheaper. You are asked to help Andrea and Lexus decide which company to recommend to Ms. Shaw.

- 1) Ms. Shaw wants to use the company that will be the cheapest. Which company would you recommend to her? Make a table of values to support your recommendation. Explain why you chose that company. Part of your explanation should include whether you want to use only first names, only last names, or both.
- 2) Give an example of a name you could put on a t-shirt to make Company B's price cheaper than Company A. Explain why Company B's price is cheaper in this case.
- 3) Give an example of a name you could put on a t-shirt to make Company A's price cheaper than Company B. Explain why Company A's price is cheaper in this case.
- 4) Using  $x$  as the number of letters and  $y$  as the cost of a shirt, write equations in slope-intercept form for each company.
- 5) On the given coordinate plane, draw a graph for both companies. You must use different colors for each graph. Then explain how your graph could be helpful in supporting the recommendation you made in #1.
- 6) Your two graphs should intersect at a certain point. What are the coordinates of this point? What is the significance of this point? What is true about the sections of the graph before and after this point?