

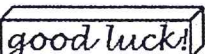



Congratulations! You are now the owner of the city's premiere Line Factory. However, instead of raking in huge profits, you've noticed that you are only breaking even because many customers are ordering the incorrect line. After your company has produced the customer's line (at great expense!), they have refused to pay for it, saying it was not the line that they wanted!

**YOUR TASK:** To prevent your customers from ordering the wrong lines, you need to produce a two-sided, tri-fold, colored pamphlet to explain how to order a line. Carefully determine what information should be in the pamphlet so that customers will know how to write their equation in  $y = mx + b$  form to get the line they want.

You can view some examples of pamphlets to help determine the layout of your pamphlet. A sample is shown at right. Your pamphlet can contain some advertisements, but remember that it needs to include *everything* you know about equations and graphs of lines so that your customers can order wisely. Remember to be specific and show examples!

 <p>Math is cool. It really challenges the mind and makes thinking fun. It provides another way to look at the world and helps to solve problems.</p> <p>We at the Math Club want to bring mathematics to more people. We want to let everyone at school know that math exists everywhere in the world - even outside of math class!</p> <p>Take this raffle, for example. To prepare for this fundraiser, we needed to use math to help us determine what the probability of winning the raffle is!</p>	 <p>With the money raised with this raffle, the math club will:</p> <ul style="list-style-type: none"> <li>Buy snacks at the math center for students who are getting tutoring.</li> <li>Buy mathematical puzzle and diversion books for the Math Club library (available to all members at lunch and after school!)</li> <li>Copy and distribute posters with our favorite "Math is Cool" logo.</li> <li>Buy trophies for the next math contest.</li> </ul> <p>So, you can see, your money for the raffle will be put to good use and will benefit the student body of our school!</p> 	<p>Sign up below to help in our other math events:</p> <p>Name: _____</p> <p>Grade: _____</p> <p>Math Course: _____</p> <p>Favorite Polygon: _____</p> 
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**DISCUSSION POINTS:**

- How do  $m$  and  $b$  affect the equation of a line?
- What information does a customer need to know to order a line correctly?
- How could a customer figure out what line to order if he or she only knew two points on the line? One point and the slope?
- How could a customer figure out what line to order if he or she only has a x-y table (perhaps a partially empty table)?
- How could a customer figure out what line to order if he or she only knew the situation (word problem) or pattern?
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