

1. Felix runs a stand selling merchandise for concerts. He sells t-shirts for \$30 and posters for \$18 and wants to determine how many of each item he should have for an upcoming show. Based on his sales at the same show last year, he knows he needs at least 20 posters and 25 t-shirts. His stand only has room for 80 items total, and his boss says he must have less than twice as many posters as t-shirts. How many of each item should Felix bring to school?

2. Coach Turner is purchasing a combination of gym bags (x) and backpacks (y) for her basketball team and is trying to determine how many bags she should purchase of each type in order to minimize her cost. If her purchasing constraints are represented in the polygon below and her cost is calculated using the function $C = 4x + 3y$, how many of each type of bag should Coach Turner purchase?

3. Farmer Fred sells small containers of his blueberries and raspberries at the farmers' market. He has gathered the following information about the number of each he sells per day:
 - At most twice as many blueberries as raspberries.
 - A minimum of 200, but not more than 500 raspberries.
 - At least 300 blueberries.
 - At most 1200 containers of berries.His costs associated with producing are \$0.85 per container of blueberries and \$0.95 per container of raspberries. He sells the blueberries for \$3.00 each and the raspberries for \$3.50 each. **How many of each does Fred need to sell in order to make the greatest profit?**

4. Due to bad weather last week, Farmer Fred only has 900 containers available for sale today. **By how much will this affect his profit?**