

1. PTA practice

Students in the Hamilton High School science club faced this kind of problem when they tried to raise \$300 to buy a special eyepiece for the high-powered telescope at their school. The school PTA offered to pay club members for an after-school work project that would clean up a nearby park and recreation center building.

Because the outdoor work was harder and dirtier, the deal with the PTA would pay \$20 for each outdoor worker and \$10 for each indoor worker. The club had 20 members eager to work on the project.

- a. Write a system of linear equations in which one equation expresses the new conditions about payment and the other shows the new number of workers.
  
  
  
  
  
  
  
  
  
  
- b. Estimate the solution for this system of equations by using graphs of the two equations. Then check your estimate.

2. Wendy is starting a catering business and is attempting to figure out who she should be using to transport the food to different locations. She has found two trucking companies that are willing to make sure her food arrives intact. Peter's Pick Up charges \$0.40 per mile and charges a flat fee of \$68. Helen's Haulers charges \$0.65 per mile and charges a flat fee of \$23.

- a. Define Variables:  $x =$  \_\_\_\_\_  $y =$  \_\_\_\_\_
  
- b. Write a System of equations to model the situation:
  
  
  
  
  
  
  
  
  
  
- c. For what distance would the cost of transporting the produce be the same for both companies?
  
  
  
  
  
  
  
  
  
  
- d. What is that equal cost?
  
  
  
  
  
  
  
  
  
  
- e. Which company charges a lower fee for 160 mile trip? Explain.