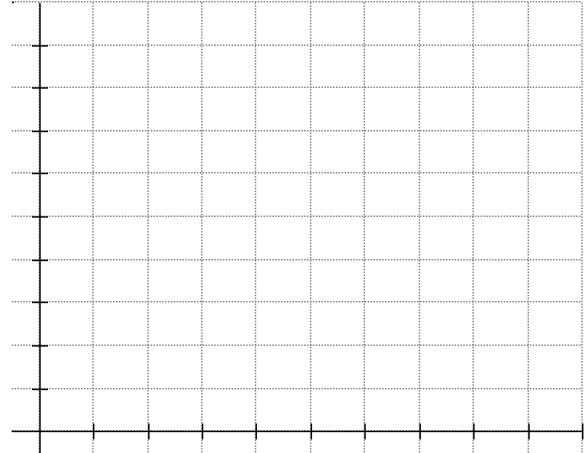


The data in the T-table represents average tree diameter for similar trees at various elevations.

1) Which variable should associate with x and which with y? Explain.

<u>Elev. (ft)</u>	<u>Dia (in)</u>	<u>Elev. (ft)</u>	<u>Dia (in)</u>
2,500	36	3,100	31
2,700	34	3,300	30
2,900	33	3,500	28



- 2) Graph the data. Label the axes and include scales.  
 Draw your "best fit" line for this data. Use a ruler!  
 (a) Find the equation of your "best fit" line.  
 (b) Find the equation of the line through endpoints  
 Show your work.

(a) Your line

(b) Line through (2500, 36) (3500, 28)

3a) Using equation (b), compute the tree diameter at 5000 ft. Round to nearest inch.

3b) Using equation (b), compute the elevation at which trees are expected to have a 50" dia.

4a) Using every-day language, interpret the situation associated with the x-intercept.

4b) Using every-day language, interpret the situation associated with the y-intercept.

5a) Using equation (b), predict timberline elevation.

5b) Using equation (b), predict maximum tree diameter.

Jake plans to sell Bobcat T-shirts at COCC Commencement. He has two options: (A) \$2.33 ea + 32.40 S&H, (B) \$2.17 ea + 65 S&H. He plans to sell the T's for \$5 ea.

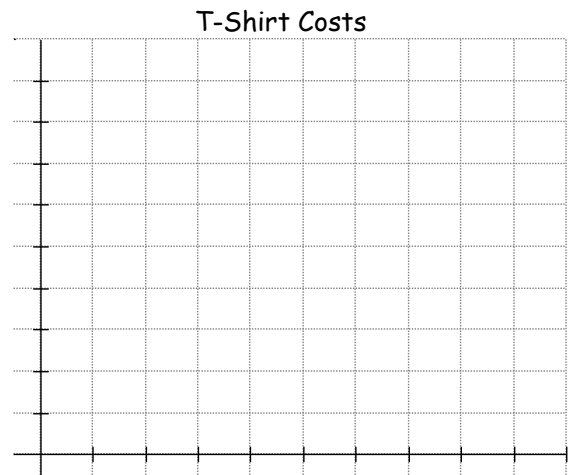
6a) Let  $x$  = quantity of T's. Let  $A$  = cost for plan A.  
Write a function for the cost of Plan A.

6b) Let  $x$  = quantity of T's. Let  $B$  = cost for plan B.  
Write a function for the cost of Plan B.

7) Graph Plan A & Plan B in  $[0, 200] \times [0, 500]$   
Label the axes and include scales.  
Graph the two functions into your calculator also.

8a) How much will it cost to purchase 200 T's

\_\_\_\_\_ Plan A \_\_\_\_\_ Plan B



8b) If Jake decides to buy 200 T's, which plan is best? (circle)                      Plan A                      Plan B

9) How many T's can Jake buy for \$400? \_\_\_\_\_ Plan A \_\_\_\_\_ Plan B

10a) Let  $x$  = quantity of T's, Let  $R$  = revenues and write a function for selling the T's at \$5 each.

10b) Assume Jake buys 200 T's with Plan A. How many must he sell to breakeven?

10c) Assume Jake buys 200 T's with Plan A. How much profit does he earn if he sells just 100 T's?