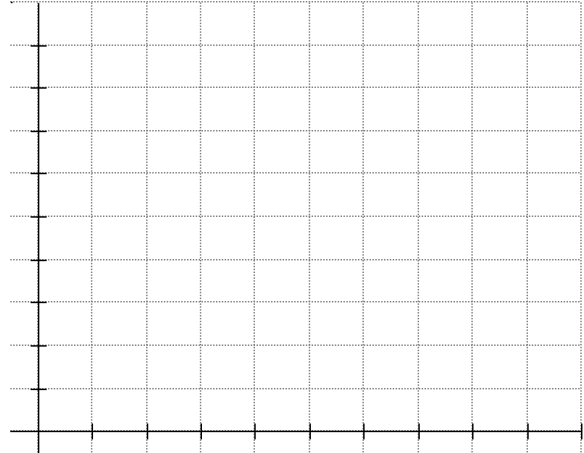


The data in the T-table represents average tree diameter for similar trees at various elevations.

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



2a) Graph the data. Label the axes and include scales.

Draw a "good fit" line for this data through the end points; (2500, 36) (3500, 28). Use a ruler!

2b) Find the equation of the line through endpoints  
Show your work.

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

3b) Using your equation, 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 your equation , predict timberline elevation (the elevation where trees no longer grow).

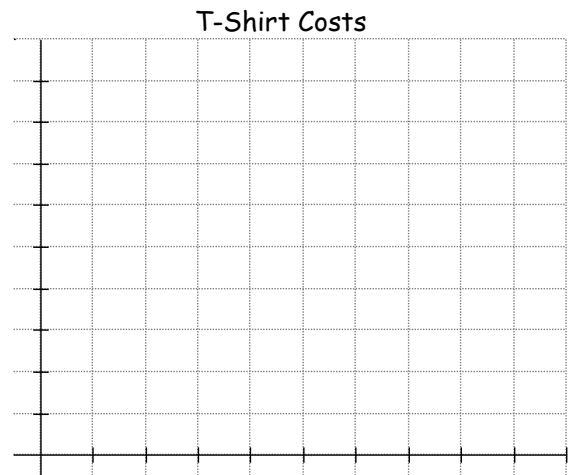
5b) Using your equation, predict the tree diameter which occurs at sea level.

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  $[0, 400] \times [0, 1000]$   
Label the axes and include scales.  
Graph the two functions into your calculator also.



8a) How much will it cost to purchase 400 T's  

Plan A	Plan B
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8b) If Jake decides to buy 400 T's, which plan is best? (circle)      Plan A                      Plan B

9) How many T's can Jake buy for \$1000?      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 500 T's with Plan A. How many must he sell to breakeven?

10c) Assume Jake buys 500 T's with Plan A. How much profit does he earn if he sells just 300 T's at full price and 200 T's at half price?