Lesson 4: Applications of Linear Functions

GOAL:
To solve contextual problems modelled by linear functions.
To solve contextual problems involving the characteristics of quadratic functions.

Example 1: Linear Application with Equation Given

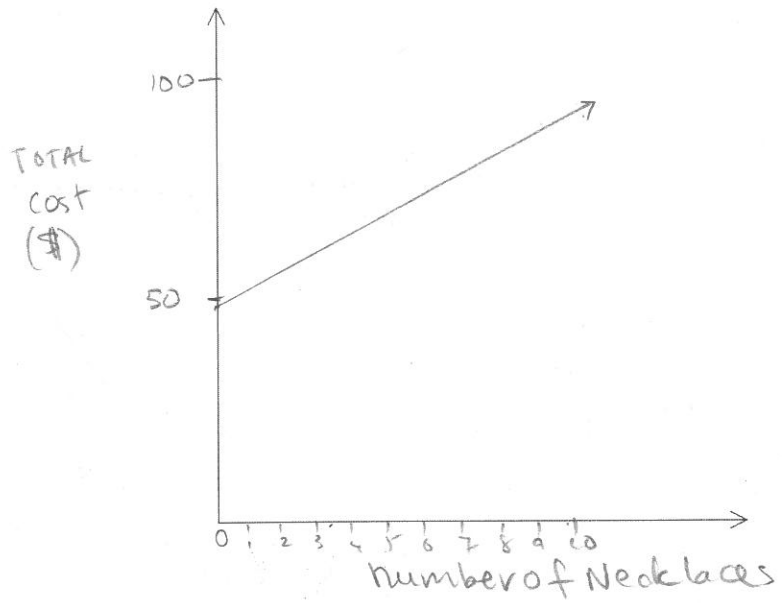
Maya is making necklaces for a craft fair. It costs her $2.50 to make each necklace, and she needs to pay $49 to rent a table at the craft fair. This situation is modelled by the following equation:

$$C = 2.5n + 49 \quad \Rightarrow y = 2.5x + 49$$

where n represents the number of necklaces made and C represents the total cost.

a) Sketch a graph of this function. (When making a graph for a word problem, extra labelling is required to show the shape, scale, and context.)

Window
x-min = 0
x max = 500
ymin = 0



b) Find Maya's total cost if she plans to make 200 necklaces. You can substitute the value for n (200) into the equation but you can also use the 2nd CALC: 1:Value option on the graphing calculator too. This is similar to the process that you use to find the ***y*-intercept**. Your teacher will guide you through this method.

① enter $y = 2.5x + 49$
② Set window
③ Find the cost for 200 necklaces
2nd TRACE ENTER x=200 ENTER This will give: $y = 549$
It will cost $549 To make 200 necklaces.