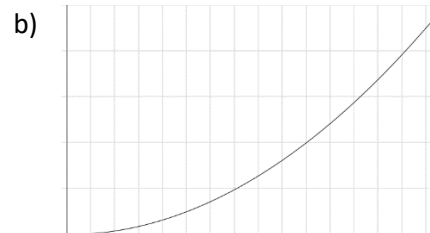
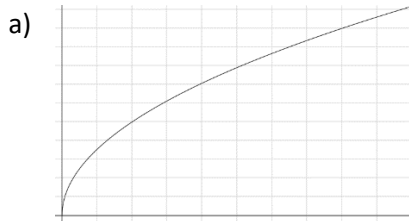


Graphs from verbal descriptions- Pretest

Name: KEY

Target 1: I understand how to identify graphs from verbal descriptions

1. James was driving from Spokane to Moses Lake (distance about 100 miles) in his new electric car! He drove faster on the first half of the trip than the second half of the trip. Which graph more accurately reflects the distance from Spokane as a function of time? Explain why?

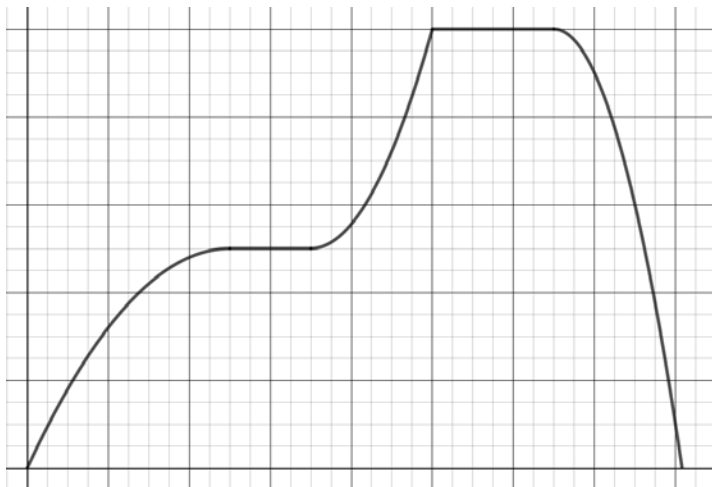


Answer: Since the rate of change is greater in the first half of the trip, the first graph is more appropriate. The rate changes starts off very positive and decreases as time goes on, while in the second graph the rate of change starts positive but increases as time goes on

Target 2: I understand how to create graphs from verbal descriptions (distance time graphs)

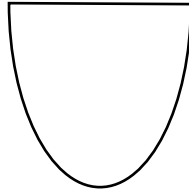
2. Toni drives from home to meet her friend at the gym, which is halfway between their homes. They work out together at the gym, then they both go to the friend's home for a snack. Finally, Toni drives home. Graph the distance between Toni and her home as a function of time, from the moment she leaves home until she returns. Explain why you drew the graph the way you did.

Answer: Many graphs can work, but they all should start at the origin and increase until about halfway up the vertical axis. Then the graph should stay at this value for a while (working out at the gym). Then the graph should go towards the top of the vertical axis (go to friend's house), stay at this point for a while (have a snack) and then go all the way back to zero (return home). Here is a possible solution:



Target 3: I understand how to create graph from physical descriptions using a constant rate of change

3. Imagine the vase shown below filling with water at a constant rate. Sketch a graph of the height of the bottle as a function of the amount of water that is in the bottle. Start from an empty bottle and end when the bottle is completely full. Explain why you drew the graph the way you did.



Answer: The cross-sectional area increases as time goes on so the rate of change of the height should decrease. Lots of graphs are possible – but here is one solution

