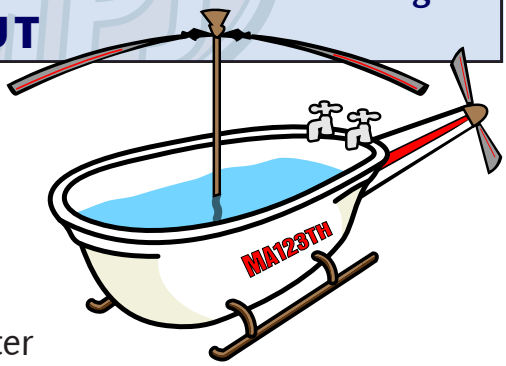
TUBICOPTERS & MORE

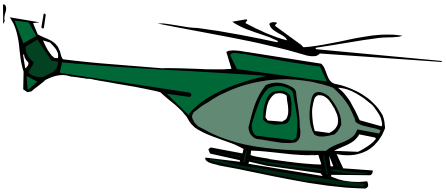


HELICOPTER

1) Why does the graph plot horizontally when the helicopter stays stationary?

2) Why does the graph plot horizontally when the helicopter goes up?

3) Why does the graph plot oblique lines (diagonally) when the helicopter goes forward?



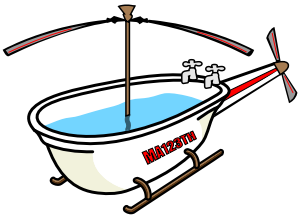
4) Why does the graph plot downward when the helicopter goes backwards? Is there a way to get the graph to "plot backwards?"

5) What determines the steepness of the graph?

6) If a horizontal line implies being in the same place at all times, what would a vertical line imply?

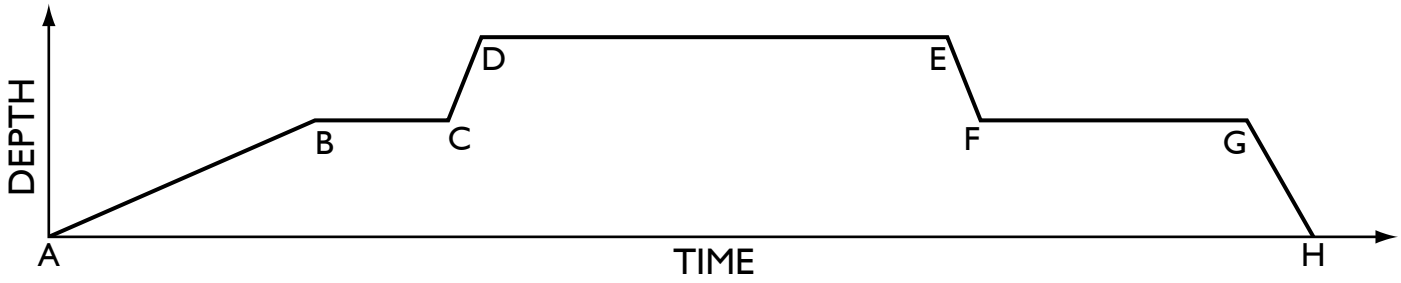
7) Sketch a graph of the time and distance for a helicopter that goes fast to the halfway point, hovers for awhile, then goes backwards fast until it is just shy of the starting point, then goes forward again slowly.

TUBICOPTERS (continued)



BATH TUB

The graph below represents the water level of a bath tub over time. It shows the tub filling, the water turned off, someone sitting in the tub, bathing, then getting out, drying off and finally the tub draining.

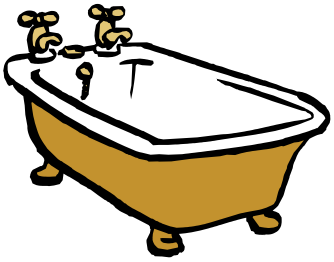


8) Mark the graph for each of these: fill, wait, sit, bath, out, dry, drain.

9) Why is the slope of $\overline{AB}$ positive while the slope of $\overline{GH}$ is negative?

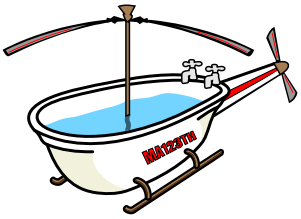
10) Why is the slope of $\overline{CD}$ greater than that of $\overline{AB}$?

11) Does the tub drain slower or faster than it fills? How can you tell?



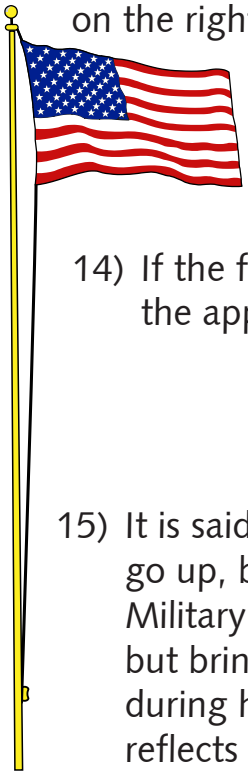
12) Why is $\overline{DE}$ higher than $\overline{BC}$? Why is $\overline{DE}$ longer than $\overline{FG}$?

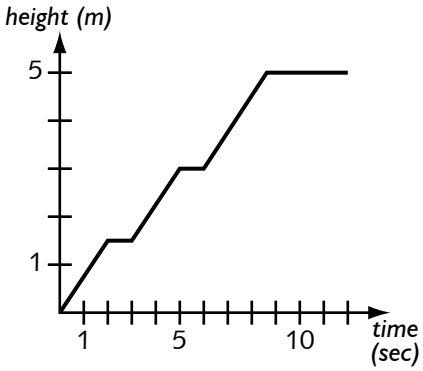
TUBICOPTERS (continued)



FLAG

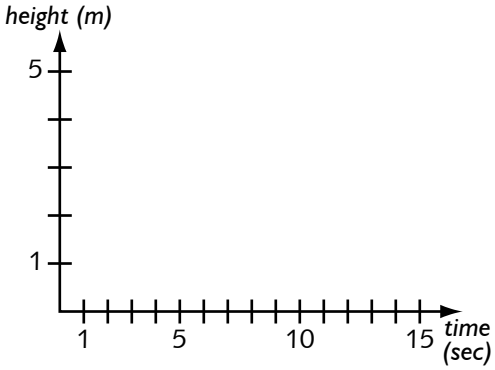
13) What was happening to the flag in the diagram on the right?





14) If the flag was raised to the top of the pole, what is the approximate height of the flagpole?

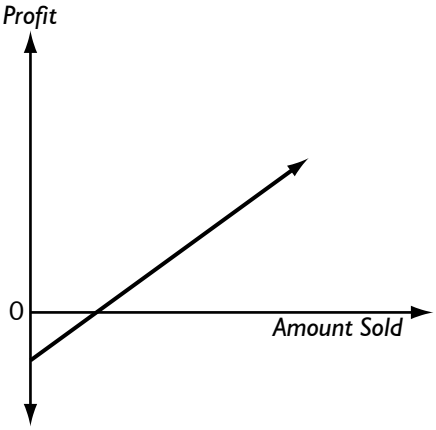
15) It is said that the American Flag is excited to go up, but sad to come down. Therefore, the Military raises the flag quickly with no pauses, but brings it down slowly, with small pauses during hand exchanges. Sketch a graph that reflects this method.



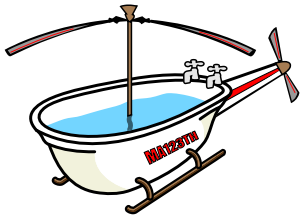
LEMONADE STAND

16) Why does the graph show profit values below zero?

17) What is the meaning of the point where the graph crosses the horizontal axis?

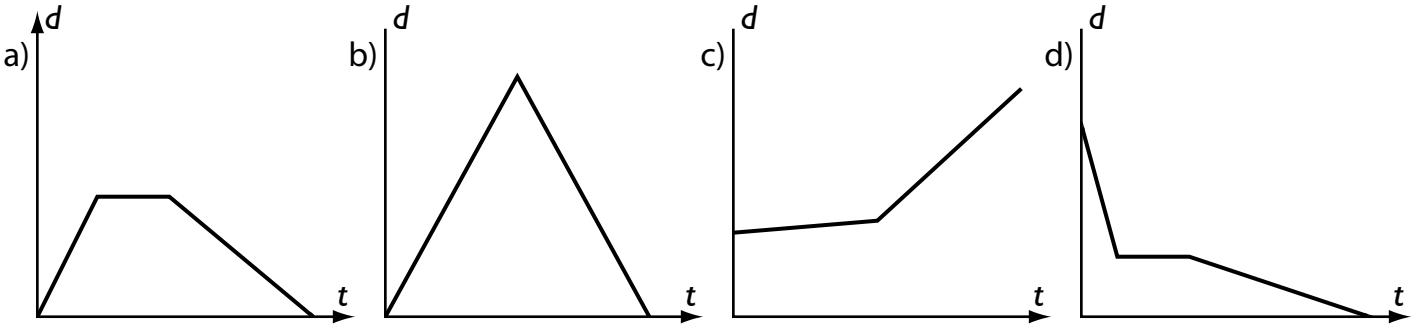


TUBICOPTERS (continued)



PRACTICE

Match each of the following scenarios with one of the graphs below.



18) Johnny runs up the street, but quickly turns and runs home at the same speed.

19) Jennifer is riding her bike home. She gets a flat tire. She can't fix it, so she walks the bike the rest of the way home.

20) Jamie is several blocks from home. She is walking to her friend's house which is even further from home. Halfway there, her friend picks her up in a car and she rides the rest of the way.

21) Jackson runs to his friend's house, hangs for a short while, and then walks home.