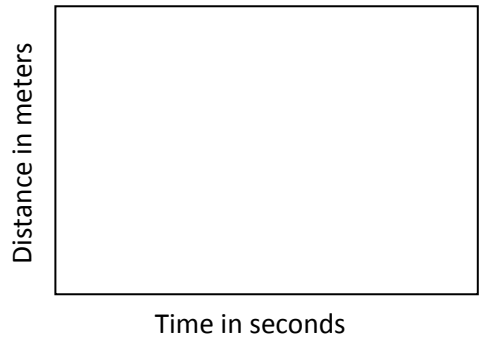
Algebra 1 Unit 4: **Linear Functions** Name: _____

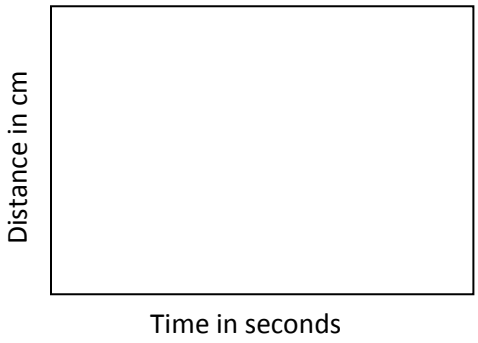
4.1.1 Motion Detector Class Introduction Date: _____ Group: _____

Sketch the distance-time graphs for the following situations:

1. You start far away from the motion detector and walk toward the motion detector at a steady rate.

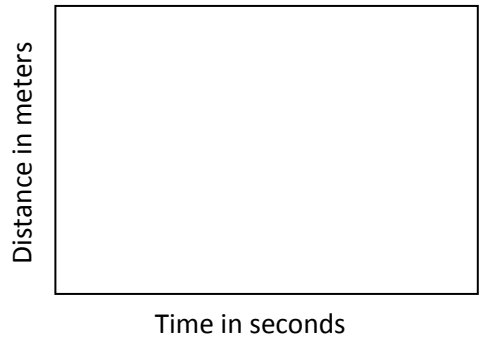


2. You are sitting still about 30 cm from the motion detector and don't move.



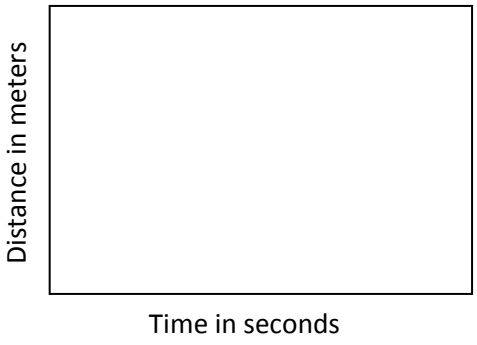
3. _____

_____



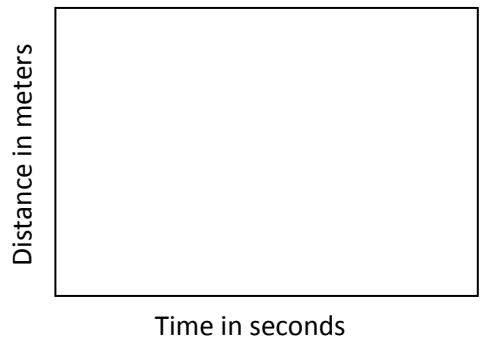
4. _____

_____



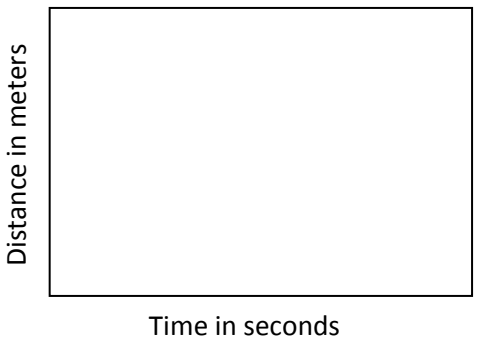
5. _____

_____

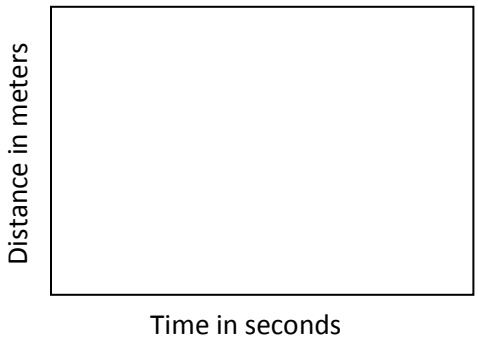


6. _____

_____

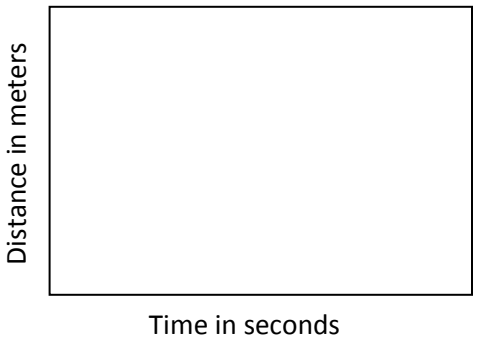


7. You start close to the detector and take a big step away once every 1 second.



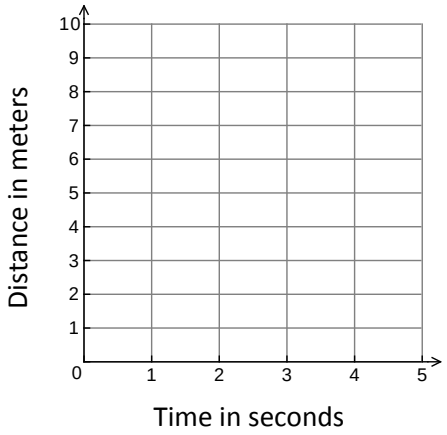
Is this function linear? _____

8. You start close to the detector and move away slowly at first, then quickly.

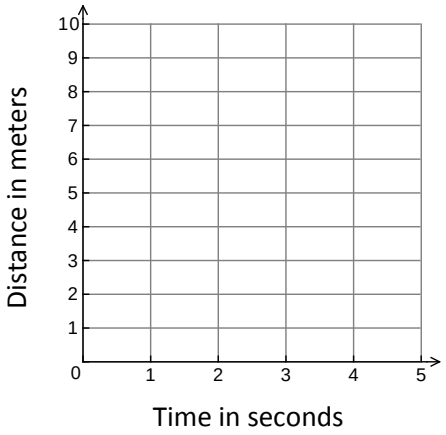


Is this function linear? _____

9. You start 6 m from the detector, and for each second that passes, you move 1 meter closer.



10. You start at the detector and move away at a rate of 3 meters per second.



11. How did we make a horizontal line?

_____

12. Can we make a vertical line? _____ Why?

_____

13. Fill in the blanks:

a. A straight line is made by a person walking _____

b. A curved line is made by a person walking _____

c. A decreasing line is made by a person walking _____

d. An increasing line is made by a person walking _____

e. A steep line is made by a person walking _____

f. A shallow line is made by a person walking _____

g. A horizontal line is made by a person who _____