**Using a Motion Detector to Collect Data to Match Descriptions of Functions**

When the Go!Motion sensor is activated, distance data is collected at equally spaced points in time. If you walk away from the sensor, or towards it, a graph of your position over time will be created. It may help to hold a reflecting surface, such as the top of the storage box, towards the sensor.

**The challenge**: Move (to and/or from) the sensor so as to produce the following graphs as described verbally.

1) A line with a positive slope

2) A line with a positive slope with a different y-intercept than (1)

3) A line with a negative slope and different y-intercept than (1) or (2)

4) A line with a negative y-intercept?

5) A line with a negative x-intercept?

6) A line with a positive x-intercept?

7) A piecewise graph that would begin with a line with a negative slope, level off for two seconds, and continue a negative slope

8) An absolute-value graph that opens down

9) A parabola that is concave up

10) A parabola that is concave down

11) A step-function