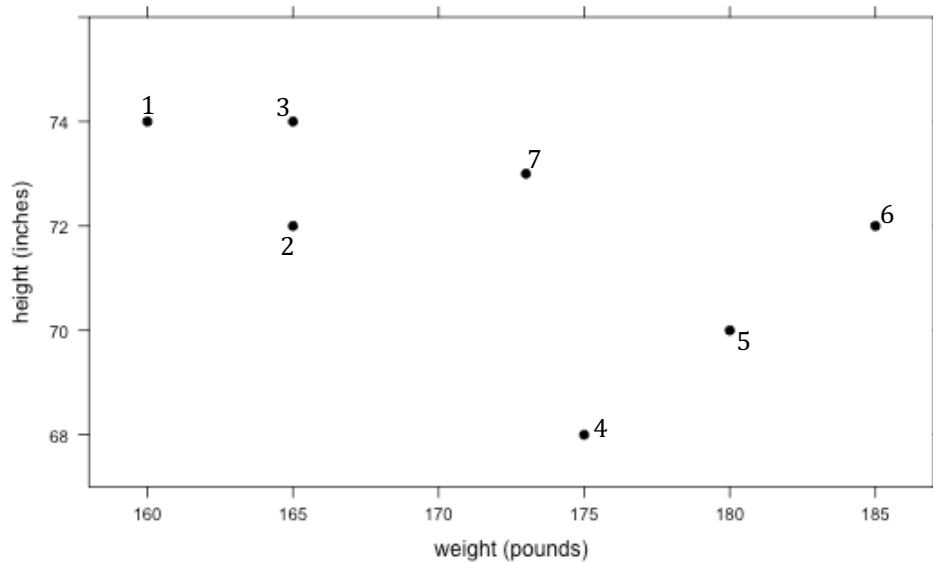Name:_____   Date:_____

Find the Clusters

Round 0 – Initialization

Pick random points for your initial cluster centers.

Cluster A center: (_____ , _____)

Cluster B center: (_____ , _____)

Plot your two points for A and B on the graph below.

Assignment Step: For each observation, determine if the distance to point A or point B is smaller and record that grouping in the table below. You can use the distance formula or a ruler if it is too close to call.

Obs	Point	Cluster
1	(160, 74)	
2	(165, 72)	
3	(165, 74)	
4	(175, 68)	
5	(180, 70)	
6	(185, 72)	
7	(173, 73)	

Update Step: Find the mean x- and y-values for the observations that were assigned to Cluster A.

New Cluster A center: (_____ , _____)

Find the mean x- and y-values for the observations that were assigned to Cluster B.

New Cluster B center: (_____ , _____)

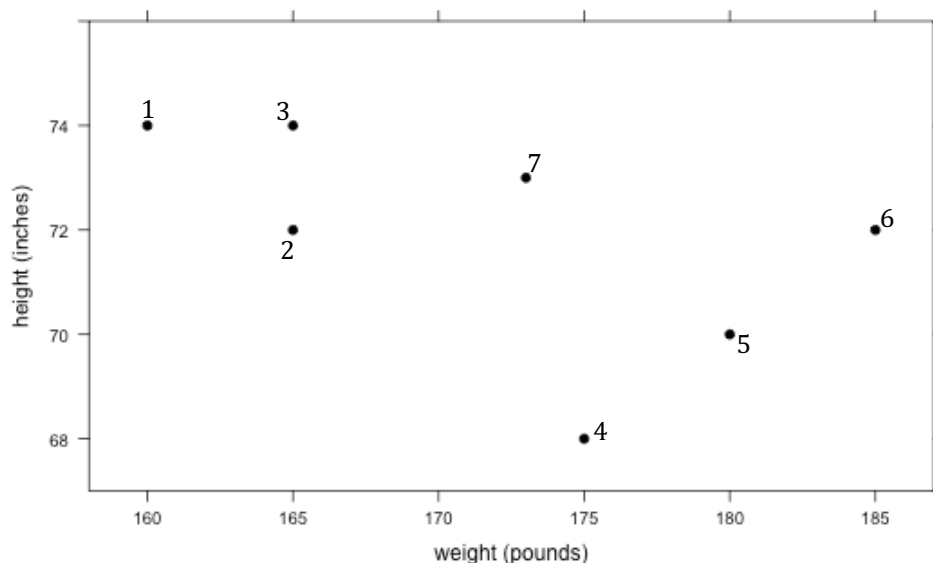*Plot your new A and B points in the Round 1 graph (on the next page).*

Name: _____   Date: _____ _____

Find the Clusters

Round 1

Plot your new cluster centers, points A and B, below.

Assignment Step: For each observation, determine if the distance to point A or point B is smaller and record that grouping in the table below. You can use the distance formula or a ruler if it is too close to call.

Obs	Point	Cluster
1	(160, 74)	
2	(165, 72)	
3	(165, 74)	
4	(175, 68)	
5	(180, 70)	
6	(185, 72)	
7	(173, 73)	

Did any of the observations change clusters from Round 0?

     If no, circle the two cluster groups on the plot above. You have finished classifying the observations into groups and do not need to continue.

     If yes, which observations? _____

Update Step: Find the mean x- and y-values for the observations that were assigned to Cluster A.

              New Cluster A center: (_____, _____)

Find the mean x- and y-values for the observations that were assigned to Cluster B.

              New Cluster B center: (_____, _____)

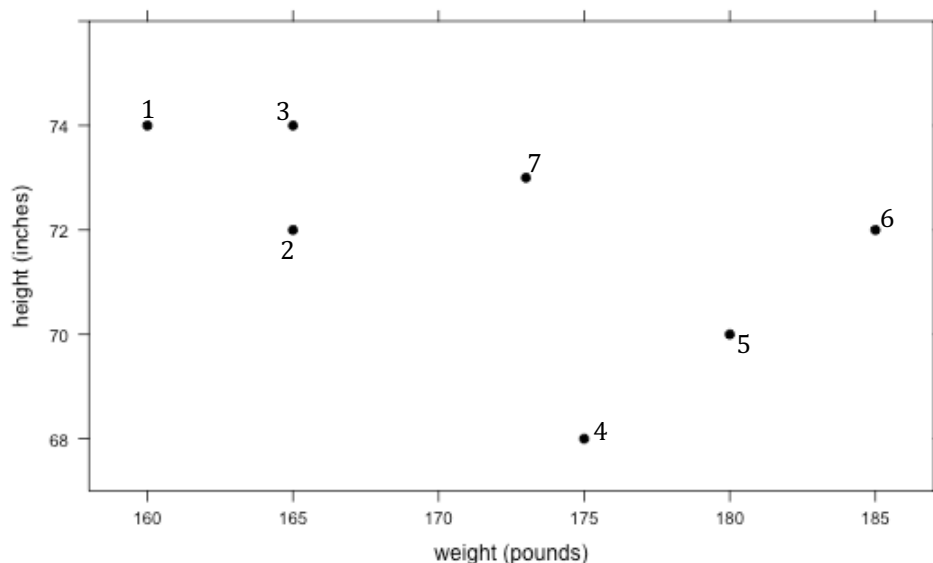***Plot your new A and B points in the Round 2 graph (on the next page).***

Name: _____   Date:_____ _____

Find the Clusters

<u>**Round 2**</u>

Plot your new cluster centers, points A and B, below.

Assignment Step: For each observation, determine if the distance to point A or point B is smaller and record that grouping in the table below. You can use the distance formula or a ruler if it is too close to call.

Obs	Point	Cluster
1	(160, 74)	
2	(165, 72)	
3	(165, 74)	
4	(175, 68)	
5	(180, 70)	
6	(185, 72)	
7	(173, 73)	

Did any of the observations change clusters from Round 1?

　　　If no, circle the two cluster groups on the plot above. You have finished classifying the observations into groups and do not need to continue.

　　　If yes, which observations? _____

<u>Update Step:</u> Find the mean x- and y-values for the observations that were assigned to Cluster A.

　　　　　　New Cluster A center: (_____, _____)

Find the mean x- and y-values for the observations that were assigned to Cluster B.

　　　　　　New Cluster B center: (_____, _____)

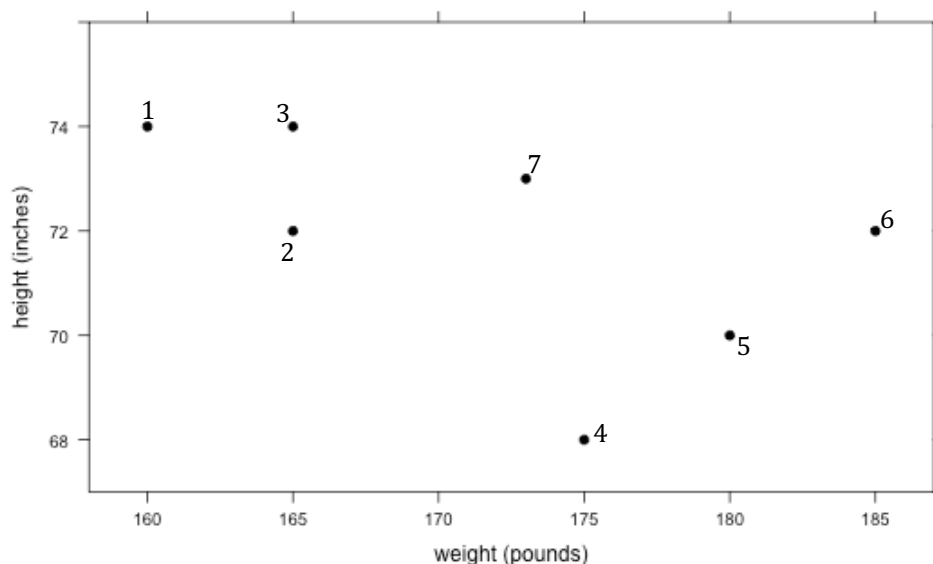*Plot your new A and B points in the Round 3 graph (on the next page)*.

Find the Clusters

Round 3

Plot your new cluster centers, points A and B, below.

Assignment Step: For each observation, determine if the distance to point A or point B is smaller and record that grouping in the table below. You can use the distance formula or a ruler if it is too close to call.

Obs	Point	Cluster
1	(160, 74)	
2	(165, 72)	
3	(165, 74)	
4	(175, 68)	
5	(180, 70)	
6	(185, 72)	
7	(173, 73)	

Did any of the observations change clusters from Round 2?

      If no, circle the two cluster groups on the plot above. You have finished classifying the observations into groups and do not need to continue.

      If yes, which observations? _____

Update Step: Find the mean x- and y-values for the observations that were assigned to Cluster A.

           New Cluster A center: (_____, _____)

Find the mean x- and y-values for the observations that were assigned to Cluster B.

           New Cluster B center: (_____, _____)

Plot your new A and B points in the Round 4 graph (ask your teacher for more graphs).