Comparison of the Heights of Two Teams

Jason wanted to compare the mean height of the players on his favorite basketball and soccer teams. He thinks the mean height of the players on the basketball team will be greater but doesn't know how much greater. He also wonders if the variability of heights of the athletes is related to the sport they play. He thinks that there will be a greater variability in the heights of soccer players as compared to basketball players. He used the rosters and player statistics from the team websites to generate the following lists.

Basketball Team – Height of Players in inches for 2010-2011 Season
75, 73, 76, 73, 79, 76, 79, 81, 80, 82, 81, 84, 82, 84, 80, 84

Soccer Team – Height of Players in inches for 2010
73, 73, 73, 72, 69, 76, 72, 73, 74, 70, 85, 71, 74, 76, 70, 72, 71, 74, 71, 74, 73, 87, 70, 72, 69, 78, 73, 76, 69

1. Create two dot plots (line plots) to represent the heights of the two different teams. Use the same scale for each graph.

$\frac{15}{17} = 88\%$ w/in 2MA

$\frac{23}{29} = 79\%$ w/in 2 mad
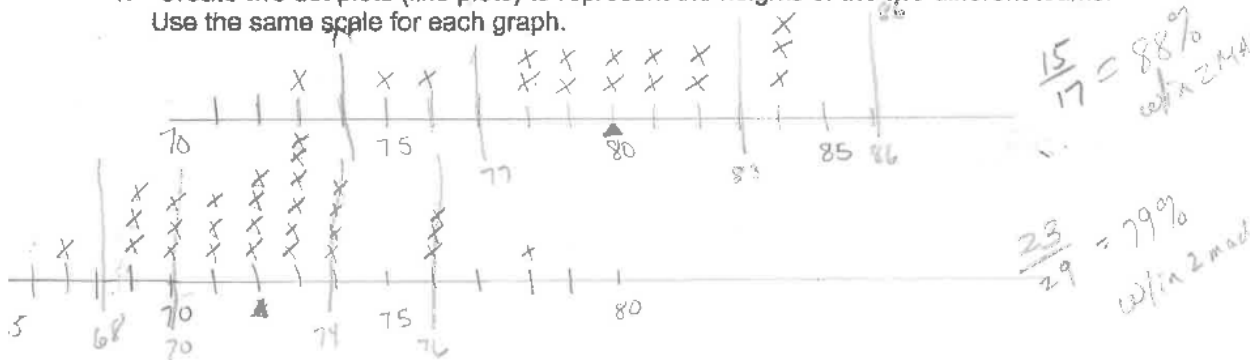
2. Describe the overlap between the two teams.

   Overlap is between 73 and 78

3. Find the mean of each data set, rounded to the nearest whole. How well does the mean help Jason compare the heights of the two teams?

   Basketball $\frac{1353}{17} \approx 80$ Soccer $\frac{2090}{29} = 72$

4. Find the mean absolute deviation (MAD) of each data set. Use the table to organize your work. How well does the MAD help Jason compare the heights of the two teams? What new information is learned?

   Mad BB = $\frac{43}{17} \approx 3$ MAD Soc: 2

5. Is the variability of the heights related to the team played? Why or why not?

   Yes BB is more consistent because 88% within 2M

Basketball Players	
Height	Deviation from Mean (Pos)
73	7
75	5
76	4
77	3
78	2
78	2
79	1
79	1
80	0
80	0
81	1
81	1
82	2
82	2
84	4
84	4
84	4
1,353	
mean	79.58 ≈ 80
MAD=	43/17 = 2.52 ≈ 3

560
120 73
——
1,353

≈ 76

Soccer Players	
Height	Deviation from Mean (Pos)
65	7
67	5
69	3
69	3
69	3
70	2
70	2
70	2
71	1
71	1
71	1
72	0
72	0
72	0
72	0
73	1
73	1
73	1
73	1
73	1
73	1
74	2
74	2
74	2
74	2
76	4
76	4
76	4
78	6
2090	
mean	2090/29 ≈ 72
MAD=	62/29 ≈ 2.13 ≈ 2

300
1680
110
——
2090

← 549