

# Lesson 5 Problem-Solving Practice

## Measures of Variation

The table shows the number of seventh and eighth graders on the Honor Roll each grading period.

	Grading Period 1	Grading Period 2	Grading Period 3	Grading Period 4	Grading Period 5	Grading Period 6
Seventh Graders	58	77	80	65	81	65
Eighth Graders	70	78	74	83	79	72

1. Find the mean absolute deviation of the number of seventh graders on the Honor Roll. Round to the nearest tenth. Describe what the mean absolute deviation means.

**8.3; Sample answer: The average distance each data value is from the mean is 8.3 students.**

2. Find the mean absolute deviation of the number of eighth graders on the Honor Roll. Describe what the mean absolute deviation means.

**4; Sample answer: The average distance each data value is from the mean is 4 students.**

3. Which students had less variation? Justify your answer.

**eighth graders; Sample answer: Since  $4 < 9$ , the eighth graders had less variation.**

4. The standard deviation of seventh graders on the Honor Roll is about 9.6. The standard deviation of eighth graders on the Honor Roll is about 4.9. Describe how this information supports your answer to Exercise 3.

**Sample answer: The seventh grade mean is 71. So, the majority of seventh graders on the Honor Roll were between 61.4 and 80.6 students. The mean eighth grade mean is 76. So, the majority of eighth graders on the Honor Roll were between 71.1 and 80.9 students. The eighth grade values were closer together.**