

# AFM Objective 1.02

## Statistics

---

Solve all problems neatly on a separate sheet of a paper. YOU MUST SHOW ALL WORK FOR CREDIT. NO WORK=NO CREDIT. Label

Due Friday, May 5th

---

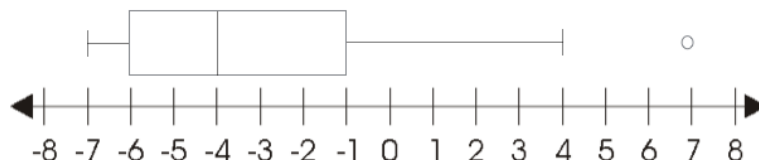
**Problem 1:** A student needs to finish a class with at least an 80 in order to maintain a scholarship. The student has the following test scores in class: 75, 82, 79, 86, 89, 70, 74, and 76. The final grade is calculated by averaging the test scores and there is only one test left to take. (All test are out of 100 points.)

- What is the lowest possible test score the student can earn to maintain the scholarship?
- In order to make the deans list, the student must earn a 90 for this course. Is the dean's list a possibility for this student? Explain.

**Problem 2:** The number of pages a print cartridge can print before needing to be replaced is normally distributed. The mean for a certain printer cartridge is 480 pages before needing to be replaced with a standard deviation of 20 pages. A large office building places a bulk order for 300 of those print cartridges.

- How many of the 300 print cartridges should be expected to print between 460 and 500 pages before needing to be replaced?
- How many of the 300 print cartridges should be expected to print between 440 and 520 pages?

**Problem 3:** Look at the box and whisker plot below and answer the following questions.










- What information can you interpret from the graph? (Median, IQR, Outliers, etc)
- How can you describe the distribution (shape) of the data graphed?

**Problem 4:**

The lifetime of a particular type of car tire is normally distributed. The mean lifetime is 50,000 miles, with a standard deviation of 5,000 miles. Of a random sample of 15,000 tires, how many of the tires are expected to last for between 45,000 and 55,000 miles?

**Problem 5:** The frequency chart below shows the number of males in a college course categorized by height.

Height (inches)	Number males
51-55	
56-60	
61-65	
66-70	
71-75	
76-80	
81-85	

- What is the shape of the distribution?
- Estimate the mean and the median.
- How might this chart and distribution be effected if the data for the females were included?