

For each of the following questions, draw and label a normal curve that represents the question asked.

- The circumferences of WNBA basketballs follow a normal distribution where  $\mu = 29.0$  ; and  $\sigma = 0.1$  inches.
  - What proportion of WNBA basketballs are smaller than 29.1 inches?
  - What proportion of WNBA basketballs are greater than 29.2 inches?
  - If a WNBA basketball was found to be 29.2 inches, what percentile would it be?
  - What circumference would be at the 90<sup>th</sup> percentile?
  - Suppose 35 basketballs are used for warm ups before an NBA game. About how many balls would be between 28.9 and 29.1 inches?
- The number of minutes Sully drives to work can be represented by a normal distribution with the parameters  $\mu = 14$  and  $\sigma = 2$  minutes.
  - On average, how long does it take Sully to drive to work?
  - If Sully comes to work for 185 days, about how many drives to work will be less than 10 minutes?
  - What percent of the time does it take Mr. Kelly longer than 15 minutes to drive to work?
  - What time represents the 98<sup>th</sup> percentile? Explain what this time means.
- Suppose the number of total MC first-time passes by students who complete the A2 course is normally distributed with an average number of total first-time passes as 45 with a standard deviation of 6.
  - Find  $\mu$  and  $\sigma$ .
  - What # of MC first-time passes would be considered the 75<sup>th</sup> percentile?
  - What percent of students have between 35 and 45 total first-time pass MCs?
  - Mr. Sully's class has 60 students. About how many students will have more than 60 first-time passes?

## 12.3 Corrective Assignment Answers

1. a. Draw the curve! 29.0 in the middle, increases by 0.1 on x-axis. About 84% 1b. About 2.3% 1c. about 98<sup>th</sup> percentile 1d. 29.13 inches 1e. about 68% of 35, or 23.89 balls. About 24 balls.  
 2a. About 14 minutes. 2b. About 2.3% of 185, or about 4.2 days 2c. About 30.85% % of the drives 2d. The 98<sup>th</sup> percentile is 18.10 minutes. This means that 98% of the time, the drive will be about 18 minutes or less.  
 3a.  $\mu = 45$  passes and  $\sigma = 6$  passes 3b. About 49 passes. 3c. about 45.2% 3d. About 0.37 students. Maybe 1 student will, on a good year. Mostly likely, 0 students will, however.