

1.
 - a. $7/16 = 0.4375$, so the 43.75th percentile
 - b. 150

2.
 - a. 43rd percentile. The number of pages in Harry Potter and the Prisoner of Azkaban is greater than or equal to 43% of the books in the Harry Potter series.
 - b. $z = -0.78$. The number of pages in Harry Potter and the Prisoner of Azkaban is 0.78 standard deviations below the mean number of pages in the Harry Potter series, which is 486.7 pages.
 - c. The z -score for Harry Potter and the Chamber of Secrets will be lower (more negative) than the z -score for Harry Potter and the Prisoner of Azkaban because it is farther below the mean.

3. \$0.662

4.
 - a. Value B is farther from the mean because the z -score has a larger absolute value.
 - b. Value A is at the larger percentile. Value A has a positive z -score, which means it is above the mean and has a percentile greater than 50%. Value B has a negative z -score, which means it is below the mean and has a percentile less than 50%.

5.
 - a. 199.2 milliseconds
 - b. Tommy was above the mean time while Fiona was below the mean time.
 - c. 346.8 milliseconds

6.
 - a. The business graduate. The business graduate's salary is \$62,784.20 and the communications graduate's salary is \$61,109.40.
 - b. Luke. Lindsey's salary produces a z -score of 0.35 and Luke's salary produces a z -score of 1.29 so Luke's salary is more standard deviations above the mean salary for communications graduates than Lindsey's salary is above the mean salary for business graduates.
 - c. It would be more surprising for a business graduate to receive a starting salary of \$60,000 because that would have a z -score of -1.67 while a communications graduate with a starting salary of \$60,000 would have a z -score of 0.53. The business graduate is farther away from the mean than the communications graduate.

7.
 - a. 55th percentile
 - b. 34 pounds
 - c. 20 patients

8. D

9. A