**MAT150 Statistics Assignment #12** [**www.helpyourmath.com/150.5**](http://www.helpyourmath.com/150.5)

1. For each problem below draw a picture of the normal curve and shade the area you have to find. Let Z represent a variable following a standard normal distribution.

* + 1. Find the proportion that is less than z = 1.02

* + 1. Find the proportion that is between z = -.12 and z = 1.05

1. Calculate the probability from the z-table.

* 1. 𝑃(𝑍 > 2.35)
  2. 𝑃(𝑍≥ 2.35)
  3. 𝑃(𝑍 > −0.45)
  4. 𝑃(𝑍 < −1.22)
  5. 𝑃(𝑍 < 2.11)
  6. 𝑃(−0.45 < 𝑍 < 2.11)
  7. 𝑃(−1.67 < 𝑍 < 0)
  8. 𝑃(0 < 𝑍 < 2.10)
  9. 𝑃(−1.05 < 𝑍 < 0.48)
  10. 𝑃(1.12 < 𝑍 < 1.55)
  11. 𝑃(−1.55 < 𝑍 < −1.12)

1. A normal distribution of BMCC MAT51 scores has a standard deviation of 1.5. Find the z-scores corresponding to each of the following values:

* + 1. A score that is 3 points above the mean.

* + 1. A score that is 1.5 points below the mean.
    2. A score that is 2.25 points above the mean

1. Scores on BMCC fall 2017 MAT150.5 department final exam form a normal distribution with a mean of 70 and a standard deviation of 8. What percent of the population has the following?

* + 1. A score greater than 90

* + 1. A score between 60 and 85

* + 1. A score less than 60

1. A population of a city is normally distributed with a mean age of 38 and a standard deviation of 4.2. Find the probability that a person chosen at random is between 30 and 40. Suppose the population of the city is 1,000,000. How many people are between 30 and 40?