

*This worksheet focuses on the computations of Section 1C
It is not 'due'; it is to give you practice. A solution key will be provided.*

1. A machine is used to put nails into boxes. It does so such that the actual number of nails in a box is normally distributed with a mean of 106 and a standard deviation of 2.
 - a) What percentage of boxes contain
 - i more than 104 nails?
 - ii What percentage of boxes contain more than 110 nails?
 - iii What percentage of boxes contain less than 108 nails?
 - iv What percentage of boxes contain less than 100 nails?
 - v What percentage of boxes contain between 102 and 112 nails?
 - vi What percentage of boxes contain between 100 and 106 nails?
 - b) What is the z-score for a box containing
 - i. 101 nails? ii 103 nails? iii 107 nails?
 - c) What is the percentile for a box containing
 - i. 101 nails? ii 103 nails? iii 107 nails?

2. The heights of the people of the planet Ixx are normally distributed with a mean of 40 inches and a standard deviation of 5 inches. [They are a vertically diverse people.]
 - a) What percentage of Ixxians are
 - i over 30 inches tall? iv under 40 inches tall?
 - ii over 45 inches tall? v between 35 and 55 inches tall?
 - iii under 50 inches tall? vi between 25 and 35 inches tall?
 - b) What is the z-score for an Ixxian of height
 - c) What is the percentile for an Ixxian of height
 - i 32 inches? ii 47 inches iii 51 inches
 - d) What is the height of an Ixxian who is at the
 - i. 25th percentile? ii 40th percentile iii 60th percentile iv 86th percentile