**How to use z-scores and the Normal model to determine the probability of an outcome and to find a raw score from a percentile (Ch. 5)**

A. Definitions & Formulas:

* Z-score:

B. Assumptions & Conditions:

C. Example Problem: On the driving range, Tiger Woods practices his swing with a particular club by hitting many, many balls. Suppose that when Tiger hits his driver, the distance the ball travels follows a Normal distribution with mean 304 yd and standard deviation 8 yd.

i. What percent of Tiger’s drives travel at least 290 yards? Sketch a picture and show work to support your answer.

ii. What is the probability that Tiger’s drive is between 300 and 325 yards? Sketch a picture and show work to support your answer.

iii. Describe the drive distance of the worst 10% of Tiger’s drives. Sketch a picture and show work to support your answer.

iv. Find the IQR of Tiger’s drive distances. Sketch a picture and show work to support your answer.

D. Calculator Steps/TI Tips:

E. Tricks, tips and other things to remember (student notes):