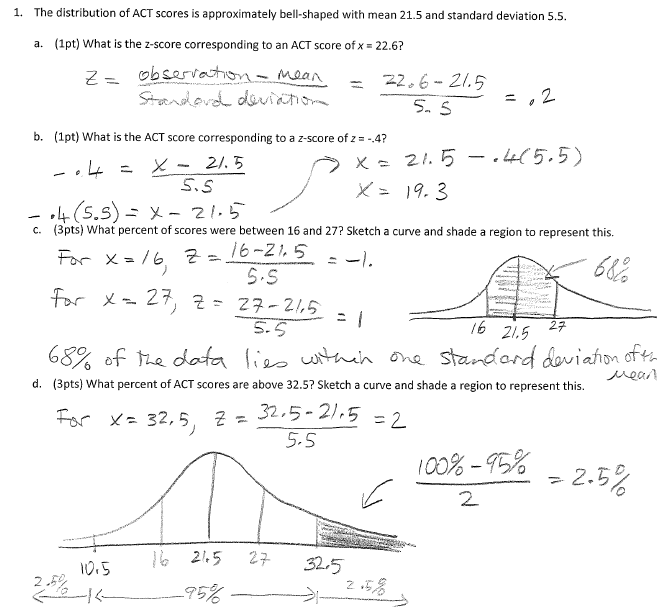
# MA 207 Section 2.5 Empirical Rule Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The distribution of ACT scores is approximately bell-shaped with mean 21.5 and standard deviation 5.5.
   1. (1pt) What is the z-score corresponding to an ACT score of *x* = 22.6?
   2. (1pt) What is the ACT score corresponding to a *z*-score of *z* = -.4?
   3. (3pts) What percent of scores were between 16 and 27? Sketch a curve and shade a region to represent this.
   4. (3pts) What percent of ACT scores are above 32.5? Sketch a curve and shade a region to represent this.
   5. What percent of ACT scores are below 32.5?
   6. What percent of ACT scores are below 16?
   7. What percent of ACT scores are between 16 and 32.5?

# MA 207 Section 2.5 Empirical Rule—KEY



* 1. What percent of ACT scores are below 32.5?

100% - 2.5% = 97.5%

* 1. What percent of ACT scores are below 16?

½ (100% - 68%) = ½ (32%) = 16%

* 1. What percent of ACT scores are between 16 and 32.5? (Hint: use the two parts just above.)

97.5% - 16% = 81.5%