3. [12 points]

    a. [6 points] Suppose $F(x)$ is a cumulative distribution function for the height x, in meters, of the students on the University of Michigan campus. For each of the following, circle MUST BE, COULD BE, or CANNOT BE if the statement must be true, could be true, or cannot be true.

        • $F(2) < F(1)$.

           MUST BE   COULD BE $\boxed{\text{CANNOT BE}}$

        • $\lim\limits_{x\to\infty} F(x) = 1$.

           $\boxed{\text{MUST BE}}$ COULD BE   CANNOT BE

        • $F(1.8) = 0.6$.

           MUST BE $\boxed{\text{COULD BE}}$ CANNOT BE

    b. [6 points] Which of the following series converge? Circle all that apply. If none converge, circle NONE.

$$\sum_{n=1}^{\infty} \frac{e^n}{n} \qquad\qquad \boxed{\sum_{n=1}^{\infty} \frac{(-1)^n}{n^{0.1}}} \qquad\qquad \boxed{\sum_{n=1}^{\infty} \frac{1}{n^{1.1}}}$$

$$\sum_{n=1}^{\infty} e^{-1/n} \qquad\qquad\qquad \text{NONE}$$