MS Module 1 Normal probability plots practice exam questions

(The attached PDF file has better formatting.)

Probability distributions used in this course include normal distributions, *t* distributions (heavy-tailed), uniform distributions (light-tailed), *F* distributions (positively skewed), χ^2 distributions (positively skewed), and others (binomial distributions, Poisson distributions).

Normal probability plots test if a sample of values is normally distributed, heavy-tailed, light-tailed, positively skewed, negatively skewed, or other (such as a distribution with two or more modes). The test is qualitative, not quantitative. These plots are used throughout the textbook.

Final exam questions on normal probability plots are either word questions or graphics questions.

Typical word questions are

Question #1: If many points lie above the comparison line in the upper tail and below the comparison line in the lower tail of a normal probability plot, the empirical distribution is most likely

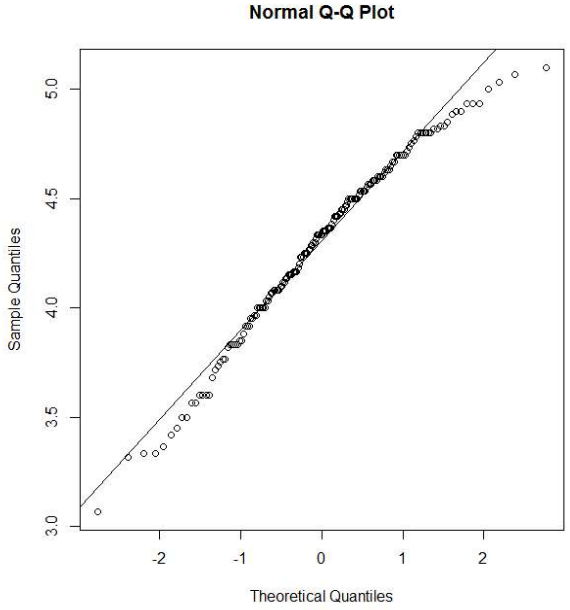
A. Symmetric and heavy tailed
B. Symmetric and light tailed
C. Positively skewed
D. Negatively skewed
E. Normally distributed

Question #2: Which of the following is true regarding light tailed distributions in normal probability plots? [The lower tail is the left side of the graph; the upper tail is the right side of the graph.]

A. Many points lie above the comparison line in both tails.
B. Many points lie below above the comparison line in both tails.
C. Many points lie above the comparison line in the upper tail and below the comparison line in the lower tail.
D. Many points lie below the comparison line in the upper tail and above the comparison line in the lower tail.
E. The slope of the comparison line is proportional to the reciprocal of the variance of the distribution.

A typical graphic question is

Question #3: A normal probability plot for “Old Faithful” eruptions longer than three minutes is



The distribution is which of the following?

A. Bi-modal
B. Positively skewed
C. Negatively skewed
D. Heavy tailed
E. Light tailed