

Probability and Statistics (MATH 1530-017)

Attendance Quiz, April 7, 2009

NAME _____ E-NUMBER _____

Pick the letter of the best answer. The problems are worth 2 points each.

1. The number of hours a light bulb burns before failing varies from bulb to bulb. The distribution of burnout times is strongly skewed to the right. The Central Limit Theorem says that
 - (a) as we look at more and more bulbs, their average burnout time gets ever closer to the mean μ for all bulbs of this type.
 - (b) the average burnout time of a large number of bulbs has a distribution of the same shape (strongly skewed) as the distribution for individual bulbs.
 - (c) the average burnout time of a large number of bulbs has a distribution that is close to normal.
 - (d) the average burnout time of a large number of bulbs has a binomial distribution.

2. A laboratory scale is known to have a standard deviation of $\sigma = 0.001$ gram in repeated weighings. Scale readings in repeated weighings are normally distributed, with mean equal to the true weight of the specimen. If you weigh a specimen three times ($n = 3$) on this scale, the mean result \bar{x} has standard deviation
 - (a) 0.000577 gram.
 - (b) 0.001 gram.
 - (c) 0.003 gram.
 - (d) 0.000333 gram.