59. 405.51

61. a. X = amount of change students carry
b. $X \sim E(0.88, 0.88)$
c. $\overline{x}$ = average amount of change carried by a sample of 25 sstudents.
d. $\overline{x} \sim N(0.88, 0.176)$
e. 0.0819
f. 0.4276
g. The distributions are different. Part a is exponential and part b is normal.

63. a. length of time for an individual to complete IRS form 1040, in hours.
b. mean length of time for a sample of 36 taxpayers to complete IRS form 1040, in hours.
c. $N\left(10.53, \frac{1}{3}\right)$
d. Yes. I would be surprised, because the probability is almost 0.
e. No. I would not be totally surprised because the probability is 0.2312

65. a. the length of a song, in minutes, in the collection
b. $U(2, 3.5)$
c. the average length, in minutes, of the songs from a sample of five albums from the collection
d. $N(2.75, 0.0660)$
e. 2.71 minutes
f. 0.09 minutes

67. a. True. The mean of a sampling distribution of the means is approximately the mean of the data distribution.
b. True. According to the Central Limit Theorem, the larger the sample, the closer the sampling distribution of the means becomes normal.
c. False. The standard deviation of the sample distribution of the means will decrease as the sample size increases; however, the standard deviation of the sample distribution of the means will not equal the standard deviation of X.

69. a. X = the yearly income of someone in a developing country
b. the average salary from samples of 1,000 residents of a developing country
c. $\overline{X} \sim N\left(2000, \frac{8000}{\sqrt{1000}}\right)$
d. Very wide differences in data values can have averages smaller than standard deviations.
e. The distribution of the sample mean will have higher probabilities closer to the population mean.
$P(2000 < \overline{x} < 2100) = 0.1537$
$P(2100 < \overline{x} < 2200) = 0.1317$

71. b

73. a. the total length of time for nine criminal trials
b. $N(189, 21)$
c. 0.0432
d. 162.09; ninety percent of the total nine trials of this type will last 162 days or more.

75. a. X = the salary of one elementary school teacher in the district
b. $X \sim N(44{,}000, 6{,}500)$
c. ΣX ~ sum of the salaries of ten elementary school teachers in the sample
d. $\Sigma X \sim N(44000, 20554.80)$
e. 0.9742
f. \$52,330.09
g. 466,342.04
h. Sampling 70 teachers instead of ten would cause the distribution to be more spread out. It would be a more