

1. The summary statistics for selling prices (in thousands of dollars) of 35 luxury condominiums are as follows:

\bar{x}	S_x	Min.	Q1	Med.	Q3	Max.
651	510	238	315	545	775	2500

Which of the following correctly determines the boundaries for outliers in this distribution?

- (A) $545 \pm 1.5(460)$
 (B) $651 \pm 1.5(460)$
 (C) $651 \pm 1.5(510)$
 (D) $315 - 1.5(460)$ and $775 + 1.5(460)$
 (E) $315 - 1.5(510)$ and $775 + 1.5(510)$
2. The table below shows the results of a survey of 34 moviegoers given the statement, "There is too much violence in movies."

Opinion Rating	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Frequency	2	7	13	5	7

How much smaller is the proportion of respondents who strongly agreed with the statement than the proportion of *all* who disagreed?

- (A) 0.059
 (B) 0.176
 (C) 0.206
 (D) 0.265
 (E) 0.382
3. Using the cumulative frequency distribution given below, determine which statement is correct:

Less than 60	8
Less than 110	25
Less than 160	35
Less than 210	43
Less than 260	45
Less than 310	46
Less than 360	46
Less than 410	50

- (A) 0% of the values are less than 360
 (B) 25% of the values are less than 110
 (C) 25% of the values are less than 135
 (D) 50% of the values are less than 110
 (E) 50% of the values are less than 235
4. A distribution is $N(25, 5)$. According to the Empirical Rule, approximately what percent of the data would you expect to lie between 20 and 25?
 (A) 30%
 (B) 34%
 (C) 60%
 (D) 68%
 (E) 95%
5. If X is normally distributed with a mean of 50 and a standard deviation of 8, which of the following is NOT a correct way to find the probability that $x > 45$?
 (A) $P(x > 45) = P\left(z > \frac{45 - 50}{8}\right) = P(z > -0.63)$
 (B) $P(x > 45) = P\left(z > \frac{50 - 45}{8}\right) = P(z > -0.63)$
 (C) $P(x > 45) = 1 - P(x < 45)$
 (D) $P(x > 45) = 1 - P(x \leq 45)$
 (E) All of these are correct.

Free Response

The number of highway fatalities per 100,000 vehicle miles for the southwest and northeast regions of the United States over a 35-year period is given in the tables below.

Southwest

145	141	126	127	57	129	126
130	111	117	103	94	96	97
89	93	80	69	82	68	69
83	72	73	74	80	76	67
66	67	57	58	53	61	56

Northeast

113	98	88	81	75	76	75
74	70	63	64	64	60	56
54	53	52	53	55	57	55
57	55	54	53	49	47	45
43	36	34	33	34	34	35

- (a) Construct histograms for each of the data sets. Start your scale at 30 and use 20-unit intervals in each case.
 (b) Use your histograms to compare the two distributions.
 (c) Construct side-by-side boxplots of the two data sets.
 (d) What do the boxplots show that the histograms do not?