

SOLUTIONS

- (1) To make an inference about young adults, a random sample of 200 Canadians aged 20 to 29 years is drawn. This is an example of a ___ random sample. **(A)**
- (2) There is one very obvious outlier. Rounding to the nearest integer, what would the mean be if this outlier were excluded? **(E)**
- (3) Which is the best explanation for why the mean is bigger than the median? **(A)**
- (4) What percent of Fortune 500 firms lie within one standard deviation of the mean? **(E)**
- (5) Considering also this histogram, how do the shapes of the distributions compare for the number of employees versus the natural logarithm of the number of employees? **(D)**
- (6) What is the standard deviation of the natural logarithm of employees? **(A)**
- (7) What would the OLS slope be? **(D)**
- (8) What would be true about the SSE, SSR, and SST for this regression? **(C)**
- (9) What number would the SST be? **(C)**
- (10) What is the chance that one randomly selected person has Level 2 or 3 skill in numeracy? **(B)**
- (11) What is the chance that one randomly selected person has Level 1 skill in prose literacy and Level 1 skill in document literacy? **(C)**
- (12) What is the chance that one randomly selected person has Level 1 skill in prose literacy or Level 1 skill in document literacy? **(C)**
- (13) In a random sample of five people what is the chance two score Level 4/5 in numeracy? **(C)**
- (14) In a random sample of 200 people what is the chance more than 50 score Level 4/5 in document literacy? (Round your answer to the nearest 0.05.) **(A)**
- (15) In a random sample of 50 people what is the chance more than two score Level 4/5 in problem solving? **(A)**
- (16) How do you interpret 0.86? **(B)**
- (17) T/F: On average female employment is 9.12 percentage points higher in 2012 compared to 2006. **(B)**
- (18) T/F: Countries with zero female employment in 2006 on average have female employment of 9.12% in 2012. **(B)**
- (19) Approximately, what would the slope of the OLS regression line be? **(C)**

- (20) The variation in chocolate consumption across countries explains what percent of the variation in the number of Nobel Laureates across countries? **(A)**
- (21) The Nobel laureates versus chocolate scatter diagram shows an example of _____. **(B)**
- (22) Compared to an OLS line estimated with all of the data in the scatter diagram, if Sweden and Germany are removed and the OLS line re-estimated what should be expected? **(E)**
- (23) Which is the best explanation for the positive correlation in the Nobel laureates versus chocolate scatter diagram? **(C)**
- (24) What is the chance a randomly selected bag weighs within one standard deviation of the mean? **(D)**
- (25) For three randomly selected bags, what is the chance that all three weigh within two standard deviations of the mean? **(A)**
- (26) If a scale weighs to the nearest tenth of a kg, what is the chance a bag is weighed as 12.5 kg? **(B)**
- (27) What is the covariance between male employment in 2006 and male employment in 2012? **(B)**
- (28) Supposing exactly half of the population is female and half is male, what is the mean employment for both sexes combined in 2012? **(C)**
- (29) Supposing exactly half of the population is female and half is male, what is the s.d. of employment for both sexes combined in 2012? **(B)**
- (30) Suppose $X_1 \sim N(0,1)$, $X_2 \sim N(0,1)$, and $X \sim N(0,1)$. Which statement is TRUE? **(B)**
- (31) Assuming actual attendance is Uniformly distributed within each reply category, what is the mean number of lectures attended? **(D)**
- (32) Why is the assumption that actual attendance is Uniformly distributed within each reply category not plausible and what is the likely effect of this incorrect assumption? **(C)**
- (33) What is the name for the answer to Question 31? **(B)**
- (34) For 25 to 54 year olds in Canada in 2012, 81.4% are employed, 5.2% are unemployed and 13.4% are not in the labor force. For a random sample of 30, define W as the number employed, X as the number unemployed and Y as the number not in the labor force. How are W, X, and Y distributed? **(B)**