

Gen Math - Data Analysis Worksheet



1. The height of each student in a class was measured and it was found that the mean height was 160cm. Two students were absent. When their heights were included in the data for the class, the mean height did not change. Which of the following heights are possible for the two absent students?
 - (A) 155 cm and 162 cm
 - (B) 152 cm and 167 cm
 - (C) 149 cm and 171 cm
 - (D) 143 cm and 178 cm

2. The arithmetic mean and standard deviation of a certain normal distribution are 12.0 and 0.5, respectively. What value is exactly 3 standard deviations less than the mean?
 - (A) 10.5
 - (B) 11.0
 - (C) 11.5
 - (D) 12.0
 - (E) 13.5

3. If a certain sample of data has a mean of 10.0 and a standard deviation of 1.5, which of the following values is more than 3 standard deviations from the mean?
 - a. 11.0
 - b. 11.5
 - c. 13.0
 - d. 14.0
 - e. 15.0

Gen Math - Data Analysis Worksheet



4. Distribution of Test Scores in a class

Number of Students	Number of correct answers
10	36 to 40
16	32 to 35
12	28 to 31
14	26 to 27
8	0 to 25

What percent of the class answered 32 or more questions correctly?

- A. $16 \frac{2}{3}$
- B. 20
- C. $26 \frac{2}{3}$
- D. $43 \frac{1}{3}$
- E. 52

5. An aircraft travels at an average speed of 913 km/h. It departs from a town in Kenya ($0^\circ, 38^\circ\text{E}$) on Tuesday at 10 pm and flies east to a town in Borneo ($0^\circ, 113^\circ\text{E}$).

What is the distance, to the nearest kilometre, between the two towns? (Assume the radius of Earth is 6400 km.)

How long will the flight take? (Answer to the nearest hour.)

Calculate time differences given the difference in longitudes.

(Apply $15^\circ = 1$ hour and $1^\circ = 4$ minutes time difference.)

What will be the local time in Borneo when the aircraft arrives? (Ignore time zones.)

6. A machine is set for the production of cylinders of mean diameter 5.00 cm with standard deviation 0.020 cm. Within what intervals will 99% of the diameters lie? If a cylinder, randomly selected from this production, has a diameter of 5.070 cm, what conclusion could be drawn?
7. Determine the proportion of individuals in a normal population that lies within one standard deviation of the mean.

Gen Math - Data Analysis Worksheet



8. Anjali is investigating stopping distances for a car travelling at different speeds. To model this she uses the equation : $d = 0.01s^2 + 0.7s$, where d is the stopping distance in metres and s is the car's speed in km/h. Using a set of axes, sketch the part of this curve that applies for stopping distances.
9. In Broken Hill, the maximum temperature for each day has been recorded. The mean of these maximum temperatures during spring is 25.8°C , and their standard deviation is 4.2°C .
What temperature has a z-score of -1 ?
What percentage of spring days in Broken Hill would have maximum temperatures between 21.6°C and 38.4°C ?
You may assume that these maximum temperatures are normally distributed and that
- 68% of maximum temperatures have z-scores between -1 and 1
 - 95% of maximum temperatures have z-scores between -2 and 2
 - 99.7% of maximum temperatures have z-scores between -3 and 3
10. Huong used the 'capture-recapture' technique to estimate the number of trout living in a dam. She caught, tagged and released 20 trout. Later she caught 36 trout at random from the same dam. She found that 8 of these 36 trout had been tagged. What estimate should Huong give for the total number of trout living in this dam, based on her use of the 'capture-recapture' technique?
- 56
 - 90
 - 160
 - 162