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| 1. Write a radical function that has been shifted 4 units down and 3 units right from the origin. |  |
| 1. The voltage *V* required for a circuit is given by , where *P* is the power in watts and *R* is the resistance in ohms. How many more volts are needed to light a 125-watt light bulb than a 75-watt light bulb if the resistance of both is 110 ohms? | 1. The time *T* in seconds that it takes a pendulum to make a complete swing back and forth is given by the formula , where *L* is the length of the pendulum in feet and *g* is the acceleration due to gravity, 32 feet per second squared. A clockmaker wants to build a pendulum that takes 3 seconds to swing back and forth. How long should the pendulum be? |
| 1. Identify the domain, x-intercept, and y-intercept. Round answers to the nearest tenth. Then use the information to graph the function. | 1. Identify the domain, x-intercept, and y-intercept. Round answers to the nearest tenth. Then use the information to graph the function. |
| 1. The blood alcohol concentrations of 15 drivers involved in fatal accidents and then convicted with jail sentences are given below:   0.27 0.17 0.17 0.16 0.13 0.24  0.29 0.24 0.14 0.16 0.12 0.16 0.21  0.17 0.18  Give the 5-number summary for the data set.  Min: \_\_\_\_\_\_\_ Q1: \_\_\_\_\_\_\_  Median: \_\_\_\_\_\_ Q3: \_\_\_\_\_\_\_  Max: \_\_\_\_\_\_\_  Determine if there are outliers and mathematically support your answer. Determine which measure of center is most appropriate and explain why. | 1. Eleven cars were sold at Super Car Mart last week. The manager rounded each price to the nearest thousand dollars and then listed them in order, as shown below.   6, 25, 28, 28, 30, 31, 32, 35, 39, 41, 42  Give the 5-number summary for the data set.  Min: \_\_\_\_\_\_\_ Q1: \_\_\_\_\_\_\_  Median: \_\_\_\_\_\_ Q3: \_\_\_\_\_\_\_  Max: \_\_\_\_\_\_\_  Identify any outliers and mathematically support your answer. Determine which measure of center is most appropriate and explain why. |
| 1. The school superintendent asks 30 teachers if they like the school calendar. What is the population? | 1. A survey of college students learned about the number of speeding tickets they received since high school. The mean number of tickets received was 14 with a standard deviation of 3. Using the Empirical Rule, what percentage of students will have:   more than 17 \_\_\_\_\_\_\_\_\_\_\_\_ between 8 and 20 \_\_\_\_\_\_\_\_\_\_\_\_  between 5 and 17 \_\_\_\_\_\_\_\_\_\_\_\_  less than 11 \_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Water consumption by the residents in a local community is normally distributed, with a mean of 300 gallons per day. Ninety-five percent of the residents use between 264 and 336 gallons per day. What is the standard deviation of water consumption in the population? | 1. Find the variance and standard deviation:   {35, 67, 21, 16, 24, 51, 18, 32} |
| 1. In a marketing survey, 95 out of 180 participating adults reported that they would like to purchase a new car in the next year. Estimate the number of adults in a community of 11,000 adults who would like to purchase a new car in the next year. Assume that the sample is representative of the population. | 1. Statistics kept for NFL football teams regarding the number of injuries suffered by NFL players during their careers showed the mean number of injuries per player to be 9 with a standard deviation of 2. What percentage of players have:   below 6. \_\_\_\_\_\_\_\_\_\_  above 12. \_\_\_\_\_\_\_\_\_\_  between 4 and 10. \_\_\_\_\_\_\_\_\_ |
| 1. The population of 10,000 registered voters in a county is 36% Democrat, 23% Republican, and 41% Independent. How many Independent voters should be chosen for a stratified sample of 200 voters? | 1. Regina tested the average time Gold Brand batteries last. She tested 90 batteries. Identify the population, parameter, sample, and statistic of interest in this situation.   population—  parameter—  sample--  statistic of interest— |
| 1. A survey questioned 8,000 community members about how a certain parcel of land should be used (for a park or a shopping center). If 5,599 of those surveyed responded in favor of a park, what is the sample proportion for this population? Round to the nearest hundredth. | 1. You want know if self-checkout is faster than regular checkout. One hundred customers were sent to one of the checkout options.   Experimental units: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Explanatory variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Treatments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Response variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Outline the design of the above experiment. |
| 1. The average number of calories in a family-size package of chocolate chip cookies is believed to be approximately normally distributed. The mean number of calories in a random sample of 25 of the cookies is 89.42, and the standard deviation is 5.15. What is the standard error of the mean? | 1. If 7,152 out of 15,600 students who answer a post-graduation survey indicate that they intend to enter a four-year college, what is the standard error for this sample population? Round your answer to the nearest hundredth. |
| 1. In a random sample of 700 people in a town, 343 were female. Find the following:   Sample proportion for females: \_\_\_\_\_\_\_\_\_\_  Standard error: \_\_\_\_\_\_\_\_\_  Margin of Error (95% confidence level): \_\_\_\_\_\_\_\_  95% confidence interval:\_\_\_\_\_\_\_\_\_ | 1. The track coach randomly selected eight runners and timed how long it took to perform a certain drill. The times in seconds were:  |  |  |  |  | | --- | --- | --- | --- | | 45 | 41 | 70 | 39 | | 52 | 59 | 57 | 51 |   Assuming that the times follow a normal distribution, find a 95% confidence interval for the population mean. |