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| 1.  Write an equation in slope-intercept form for the line with a slopeof and a *y*-intercept of -3. |
|   | A. | *y* = *x* - 3 | B. | *y* = *x* + 3 |
|   | C. | *y* = *x* - 3 | D. | *y* = *x* + 3 |
| 2.  If you use the parent graph *f*(*x*) = *x*2, describe how you would graph*g*(*x*) = (*x* - 4)2 - 2. |
|   | A. | Move the parent graph left 4 units and down 2 units. | B. | Move the parent graph right 4 units and up 2 units. |
|   | C. | Move the parent graph right 4 units and down 2 units. | D. | Move the parent graph left 4 units and up 2 units. |
| 3.  Use the graphing calculator *f*(*x*) = *x*3 + *x*2 - *x*, andlocate the relative maximum point. |
|   | A. | (0, 0) | B. | There is no relative maximum point. |
|   | C. | (0.5, -0.292) | D. | (-1, 0.833) |
| 4.  If you use *y* = *x*3 as a reference graph, describe how you would graph *y* = (*x* + 3)3 - 4. |
|   | A. | Move 3 units to the left, then 4 units down. | B. | Move 3 units to the right, then 4 units down. |
|   | C. | Move 3 units down, then move 4 units to the right. | D. | Move 3 units up, then move 4 units to the left. |
| 5.  Identify all angles that are coterminal with angle 35°. |
|   | A. | 35° + 270*k*°, *k* is an integer |
|   | B. | 35° + 180*k*°, *k* is an integer |
|   | C. | 35° + 360*k*°, *k* is an integer |
|   | D. | 35° + 90*k*°, *k* is an integer |
| 6.  Find cos *P*. |
|   |  |
|   | A. |  | B. |  |
|   | C. |  | D. |  |
| 7.  Use the unit circle to find the value of cos 120°. |
|   | A. |  | B. |  |
|   | C. | -2 | D. |  |
| 8.  Find the value of for an angle in standard position if apoint with coordinates (-12, 5) lies on its terminal side. |
|   | A. |  | B. |  |
|   | C. |  | D. |  |
| 9.  If *P* = 27° and *r* = 11, find *p*. |
|   |  |
|   | A. |  | B. |  |
|   | C. |  | D. |  |
| 10.  The angle of elevation of a ladder leaning against a wall is 55°. The ladder is 30 feet long. How high up the wall does it reach? |
|   | A. | about 52.30 ft | B. | about 17.21 ft |
|   | C. | about 24.57 ft | D. | about 42.84 ft |
| 11.  Solve the equation cos *x* =  |
|   | A. | *x* equals 150°, 210° or any anglecoterminal with these angles. |
|   | B. | *x* equals 120°, 240° or any anglecoterminal with these angles. |
|   | C. | *x* equals 30°, 330° or any anglecoterminal with these angles. |
|   | D. | *x* equals 60°, 300° or any anglecoterminal with these angles. |
| 12.  In find *c* if *A* = 36°, *B* = 101°, and *b* = 42.7.  |
|   |  |
|   | A. | about 40.2 units | B. | about 29.7 units |
|   | C. | about 25.3 units | D. | about 31.8 units |
| 13.  Determine the number of possible solutions for , given*A* = 40°, *a* = 7, and *b* = 9. |
|   | A. | two | B. | one |
|   | C. | three | D. | none |
| 14.  Determine the number of possible solutions for , given*a* = 7, *b* = 3, and *A* = 115°. |
|   | A. | three | B. | one |
|   | C. | two | D. | none |
| 15.  In given *a* = 22, *b* = 39 and *c* = 19, find *B*. |
|   | A. | about 144.0° | B. | about 126.0° |
|   | C. | about 36.0° | D. | about 54.0° |
| 16. Evaluate tan . |
|   | A. | - | B. |  |
|   | C. | - | D. |  |
| 17. Graph *y* = 5 cos 2 for 1 period of the function. |
|   | A. |  |
|   | B. |  |
|   | C. |  |
|   | D. |  |
| 18.  Determine the amount of money in a money market account providing an annual rate of 7% compounded daily if George invested $2500 and left it in the account for 10 years. |
|   | A. | $4917.88 | B. | $4915.25 |
|   | C. | $4974.47 | D. | $5034.04 |
| 19.  Which equation is represented by the graph?  |
|   |  |
|   | A. | *y* = 2*e* | B. | *y* = 2*ex* |
|   | C. | *y* = -2*ex* | D. | *y* = -2*e-x* |
| 20.  Find the amount of time required for an investment to double at a rate of 8.5% if the interest is compounded continuously. |
|   | A. | 9.97 yr | B. | 8.15 yr |
|   | C. | 6.04 yr | D. | 10.43 yr |
| 21.  Evaluate the expression . |
|   | A. | -3 | B. |  |
|   | C. |  | D. | 3 |
| 22.  Find the value of log73638 using the change of base formula. |
|   | A. | 2.9446 | B. | 2.6392 |
|   | C. | 4.2135 | D. | 5.3721 |
| 23.  Solve 7.3 = 14.1 ln*x*. |
|   | A. | 1.6782 | B. | -0.2859 |
|   | C. | -0.6583 | D. | 3.9941 |
| 24.  What interest rate is required for an investment with continuously compounded interest to double in 5 years? |
|   | A. | 3.47% | B. | 6.93% |
|   | C. | 13.86% | D. | 3.86% |
| 25.  Find the sum of the first 25 terms in the series -15 - 8 - 1 - ··· . |
|   | A. | 1732 | B. | 1718 |
|   | C. | 1725 | D. | 1711 |
| 26.  Find the fifth term of a geometric sequence whose first term is 6 and whose common ratio is . |
|   | A. |  | B. |  |
|   | C. |  | D. |  |
|  | 27.   |
|   | A. | 42 | B. | 143 |
|   | C. | 13 | D. | 108 |
| 28.  In a certain arithmetic sequence, *a*1 = -38, *d* = 7, and *ak* = 74. Find k. |
|   | A. | 16 | B. | 17 |
|   | C. | The sequence will never take on the value 74. | D. | 6 |
| 29.  A home security company offers a security system that uses the numbers 0 through 6, inclusive, for a 3-digit security code. How many different security codes are possible if no digit may be repeated? |
|   | A. | 35 | B. | 210 |
|   | C. | 20 | D. | 120 |
| 30.  Using a standard deck of playing cards, find the probability of randomly selecting a queen, replacing it in the deck, and then selecting a heart. |
|   | A. |  | B. |  |
|   | C. |  | D. |  |
| 31.  Josie has 2 classical, 3 jazz, and 1 folk CD in her car. If she pulls 2 CDs from her CD case without looking, what is the probability that both CDs are jazz? |
|   | A. |  | B. |  |
|  | C. |  | D. |  |
| 32.  The set of data {67, 90, 83, 85, 73, 80, 78, 79, 68, 71} represents the ages at death of the first 10 U.S. Presidents. Find the range of the data. |
|   | A. | 13 | B. | 18 |
|   | C. | 23 | D. | 4 |
| 33.  Find the value of *x* so that the mean of {3, 5, 7, 8, *x*} is 9. |
|   | A. | 22 | B. | 21 |
|   | C. | 26 | D. | 27 |
| 34.  Find the measure of the reference angle of -200°. |
|   | A. | 20° | B. | 40° |
|   | C. | 160° | D. | -200° |
| 35.  Which of the following is the sine of  |
|   |  |
|   | A. |  | B. |  |
|   | C. |  | D. |  |
| 36.  If the angle the rope makes with the level ground is 47.5°, how long is the rope? |
|   |  |
|   | A. | about 23.6 feet | B. | about 51.8 feet |
|   | C. | about 25.8 feet | D. | about 47.5 feet |
| 37.  In given *a* = 22, *b* = 39 and *c* = 19, find *B*. |
|   | A. | about 54.0° | B. | about 144.0° |
|   | C. | about 126.0° | D. | about 36.0° |
| 38.  In given *A* = 100°, *b* = 7 and *c* = 6, find *a*. |
|   | A. | about 8.4 | B. | about 10.0 |
|   | C. | about 6.3 | D. | about 7.5 |
| 39.  For the graph of *y* = *bx*, the domain is \_\_\_\_\_. |
|   | A. | all real numbers > 0 | B. | all real numbers  |
|   | C. | all real numbers | D. | all real numbers  |
| 40.  The *y*-intercept for the exponential function *y* = *bx* is \_\_\_\_\_. |
|   | A. | (0, 2) | B. | (0, -1) |
|   | C. | (0, 1) | D. | (0, 0) |
| 41.  Graph *y* = 3*x* - 5. |
|   | A. |  | B. |  |
|   | C. |  | D. |  |
| 42.  Find the balance of a $500 investment after 18 years earning 7.9% interest compounded continuously. |
|   | A. | $502.20 | B. | $541.10 |
|   | C. | $2,146.32 | D. | $2,072.70 |
| 43.  Write the equation in logarithmic form  |
|   | A. |  | B. |  |
|   | C. |  | D. |  |
| 44.  Solve 46*x* = 496. |
|   | A. | 0.6472 | B. | 0.7462 |
|   | C. | 3.6413 | D. | 4.4771 |
| 45.  Find the value of log9219 using the change of base formula. |
|   | A. | 3.1021 | B. | 1.3862 |
|   | C. | 2.4527 | D. | 0.2601 |
| 46.  Find the 29th term in the arithmetic sequence -9, -4, 1, 6, ... . |
|   | A. | 136 | B. | 131 |
|   | C. | 126 | D. | 121 |
| 47.  Express the series 4 + 7 + 10 + 13 using sigma notation. |
|   | A. |  | B. |  |
|   | C. |  | D. |  |
| 48.  A bag contains 2 yellow, 4 blue, and 3 white marbles. What is the probability that a marble selected at random will not be blue? |
|   | A. |  | B. |  |
|   | C. |  | D. |  |
| 49.  Determine the median of the set of data {67, 90, 83, 85, 73, 80, 78, 79, 68, 71}. |
|   | A. | 79 | B. | 78 |
|   | C. | 77.5 | D. | 78.5 |
| 50.  What is the standard deviation for the data {67, 90, 83, 85, 73, 80, 78, 79, 68, 71}? |
|   | A. | about 7.56 | B. | about 51.44 |
|   | C. | about 7.17 | D. | 8 |
| 51.  State the amplitude for the function *y* = -2/3cosѲ. |
|   | A. | 1 | B. |  |
|   | C. | - | D. | - |
| 52.  State the amplitude and period for the function *y* = -3 sin 3Ѳ. |
|   | A. | -3;  | B. | -3;  |
|   | C. | 3;  | D. | 3;  |