Republic of the Philippines
Department of Education
National Capital Region
SCHOOLS DIVISION OFFICE
Quezon City, Metro Manila

Name: _____ Date: _____
Grade & Section: _____ Score: _____

Mathematics
Quiz Bee
S.Y. 2019–2020

Write the correct answer in the blank.
You may use the back of the paper for your computations.

_____ 1. What is the degree of the polynomial function $P(x) = 3x - 9x^3 + 5x^4 - 5$?

A. 1 B. 2 C. 3 **D. 4**

_____ 2. Given the polynomial function $P(x) = 121x^2 - 5x^{11} + x^8 + 2x^5 - 50$, find its leading term.

A. $121x^2$ B. $2x^5$ **C.** $-5x^{11}$ D. x^8

_____ 3. Which of the following is a quadratic function?

A. $y = (3x^2 + 1)(x - 2)$ C. $y = \sqrt{x^2 - 49}$

B. $y = 5(2x - 3)^2$ D. $y = \dfrac{x^2 + 5x + 6}{x - 2}$

_____ 4. Which of the following is a polynomial of three terms?

A. Binomial B. Monomial C. Multinomial **D. Trinomial**

_____ 5. The polynomial function $P(x) = 4x^4 - 17x^2 + 4$ has how many possible rational zeros?

A. 4 B. 3 C. 2 D. 1

_____ 6. What is the next term in the geometric sequence 4, 12, 36?

A. 42 B. 54 C. 72 **D. 108**

_____ 7. Find the common difference in the arithmetic sequence $3, \dfrac{13}{4}, \dfrac{7}{2}, \dfrac{15}{4}$.

A. 4 B. $\dfrac{5}{2}$ **C.** $\dfrac{1}{4}$ D. $\dfrac{3}{4}$

_____ 8. If $(x - 1)$ is a factor of the polynomial $x^2 - 2x + 1$, which one is the other factor?

A. $(x + 2)$ B. $(x - 2)$ C. $(x + 1)$ **D.** $(x - 1)$

_____ 9. Find the equation of a quadratic function whose zeros are 5 and -3.

A. $x^2 + 2x + 15 = 0$ B. $x^2 + 2x - 15 = 0$ C. $x^2 - 2x + 15 = 0$ **D.** $x^2 - 2x - 15 = 0$

_____ 10. Find the remainder of $P(x) = 3x^{100} - 4x^{50} + 8$ divided by $(x + 1)$.

A. 1 B. 5 **C. 7** D. 15

_____ 11. An angle formed by two rays whose vertex is the center of a circle is called:

A. Acute angle **B. Central angle** C. Inscribed angle D. Obtuse angle

_____ 12. The points where the graph intersects the x-axis are called:

A. Bounds B. Turning points **C. x-intercepts** D. y-intercepts

_____ 13. Which of the following characteristics of the polynomial function $y = x^3+3x^4-x^5-7x^2+4$ is correct?

A. The leading coefficient is positive and the degree is even.
B. The leading coefficient is positive and the degree is odd.
C. The leading coefficient is negative and the degree is even.
D. The leading coefficient is negative and the degree is odd.

_____ 14. Which term determines how many times a particular number is a zero or root for a given polynomial?

A. Bound B. Intercept **C. Multiplicity** D. Turning point

_____ 15. What should n be if $f(x) = x^n$ defines a polynomial function?

A. an integer
C. any number
B. a nonnegative integer
D. any number except 0

_____ 16. What is an angle whose vertex is on a circle and whose sides contain chords of the circle?

A. inscribed angle
C. central angle
B. intercepted angle
D. circumscribed angle

_____ 17. In a circle, if a central angle measures 60°, what is the measure of its intercepted arc?

A. 30° **B.** 60° C. 120° D. 300°

_____ 18. A dart board has a diameter of 40 cm and is divided into 20 congruent sectors. What is the area of one of the sectors?

A. $20\pi\ cm^2$ B. $40\pi\ cm^2$ C. $60\pi\ cm^2$ D. $80\pi\ cm^2$

_____ 19. What is the y-intercept of the graph of the polynomial function $f(x) = -2x + x^3 + 3x^5 - 4$?

A. 4 B. 2 C. 0 **D. -4**

_____ 20. How many turning points does the polynomial function $f(x) = -2x + x^3 + 3x^5 - 4$ have?

A. 2 B. 3 **C. 4** D. 5

_____ 21. Choosing a subset of a set is an example of ____.

A. Combination B. Differentiation C. Integration D. Permutation

_____ 22. What are the coordinates of the center of the circle defined by the equation $x^2 + (y - 5)^2 = 8$?

A. (-5, 8) B. (0, -5) C. (5, 8) **D. (0, 5)**

_____ 23. The product of a positive integer n and all the positive integers less than it is called ____.

A. powers of n B. multiples of n C. n-factors **D. n-factorial**

_____ 24. A radio signal can transmit messages up to a distance of 3 km. If the radio signal's origin is located at a point whose coordinates are $(4, 9)$, what is the equation of the circle that defines the boundary up to which the messages can be transmitted?

A. $(x - 4)^2 + (y - 9)^2 = 3$
C. $(x + 4)^2 + (y + 9)^2 = 3$
B. $(x - 4)^2 + (y - 9)^2 = 9$
D. $(x + 4)^2 + (y + 9)^2 = 9$

_____ 25. How many different 4-digit even numbers can be formed from the digits 1, 3, 5, 6, 8, and 9 if no repetition of digits is allowed?

A. 1,680 B. 840 C. 420 D. 120

_____ 26. What is the center of the circle $x^2 + y^2 - 4x + 10y + 13 = 0$?

A. (2, 5) B. (-2, 5) **C. (2, -5)** D. (-2, -5)

_____ 27. In how many ways can 8 people be seated around a circular table if two of them insist on sitting beside each other?

A. 360 B. 720 C. 1,440 D. 5,040

_____ 28. On a grid map of a province, the coordinates that correspond to the location of a cellular phone tower is $(-2, 8)$ and it can transmit signals up to a 12 km radius. What is the equation that represents the transmission boundaries of the tower?

A. $x^2 + y^2 - 4x + 16y - 76 = 0$ C. $x^2 + y^2 - 4x - 16y + 76 = 0$
B. $x^2 + y^2 + 4x - 16y - 76 = 0$ D. $x^2 + y^2 + 4x - 16y + 76 = 0$

_____ 29. In a town fiesta singing competition with 12 contestants, in how many ways can the organizer arrange the first three singers?

A. 132 B. 990 C. 1,320 D. 1,716

_____ 30. If a combination lock must contain 5 different digits, in how many ways can a code be formed from the digits 0 to 9?

A. 15,120 B. 30,240 C. 151,200 D. 1,000,000

Life is the most difficult exam. Many people fail because they try to copy others, not realizing that everyone has a different question paper!