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

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

Mathematics 10
Second Long Test
S.Y. 2018–2019

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

_____ 1. What is the leading coefficient of the polynomial function $f(x) = 2x + x^3 + 4$?

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

_____ 2. 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

_____ 3. The points where the graph intersects the x-axis are called:

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

_____ 4. 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.

_____ 5. 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

_____ 6. What should n be if $f(x) = x^n$ defines a polynomial function?

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

_____ 7. Which of the following occurs when the function changes from decreasing to increasing or from increasing to decreasing values?

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

_____ 8. What is an angle whose vertex is on a circle and whose sides contain chords of the circle?

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

_____ 9. An arc of a circle measures 30°. If the radius of the circle is 5 cm, what is the length of the arc?

A. 2.62 cm B. 2.3 cm C. 1.86 cm D. 1.5 cm

_____ 10. The opposite angles of a quadrilateral inscribed in a circle are ____.

A. right B. obtuse C. supplementary D. complementary

_____ 11. 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°

_____ 12. 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. $80\pi\ cm^2$

_____ 13. 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

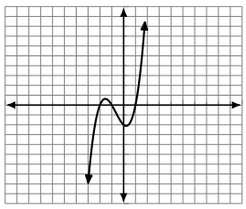
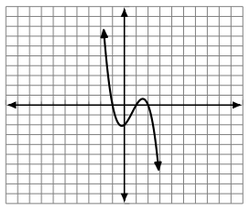
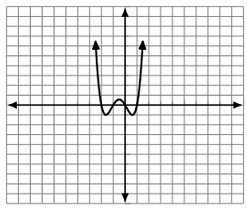
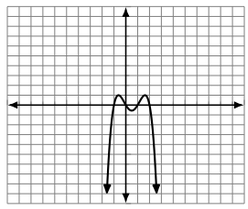
_____ 14. How many turning points does the polynomial function $f(x) = -2x + x^3 + 3x^5 - 4$ have?

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

_____ 15. Your classmate Linus encounters difficulties in showing a sketch of the graph of $y = 2x^3 + 3x^2 - 4x - 6$. What hint/clue should you give?

A. The graph falls to the left and rises to the right.
B. The graph rises to the left and falls to the right.
C. The graph rises to both left and right.
D. The graph falls to both left and right.

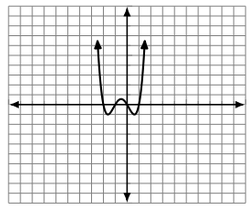
_____ 16. Which of the following could be the graph of the polynomial function $y = -x^3 + 2x^2 + x - 2$?

A.  B.  C.  D. 

_____ 17. What are the end behaviors of the graph of $f(x) = -2x + x^3 + 3x^5 - 4$?

A. rises to the left and falls to the right
B. falls to the left and rises to the right
C. rises to both directions
D. falls to both directions

_____ 18. Which polynomial function in factored form represents the given graph?

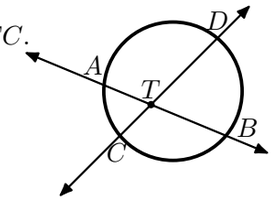


A. $y = (x + 2)(x + 1)(x - 1)$
B. $y = (x - 2)(x + 1)(x - 1)$
C. $y = x(x + 2)(x + 1)(x - 1)$
D. $y = x(x - 2)(x + 1)(x - 1)$

_____ 19. An arc with a measure equal to one-half the circumference of a circle is called:

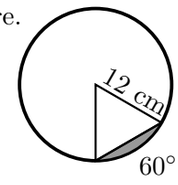
A. Intercepted arc B. Major arc C. Minor arc D. Semicircle

_____ 20. If $m\overset{\frown}{AC} = 40°$ and $m\overset{\frown}{BD} = 80°$, find $m\angle ATC$.



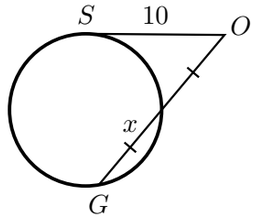
A. 40°
B. 60°
C. 80°
D. 120°

_____ 21. Find the area of the shaded region in the following figure.



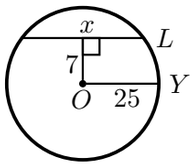
A. 24π
B. $36\sqrt{3}$
C. $24\pi - 36\sqrt{3}$
D. $12\pi - 18\sqrt{3}$

_____ 22. Find the value of x in the following figure.



A. $\sqrt{2}$
B. $10\sqrt{2}$
C. 10
D. $5\sqrt{2}$

_____ 23. Find the value of x in $\odot O$



A. 12
B. 24
C. 48
D. 60

_____ 24. If an inscribed angle of a circle intercepts a semicircle, then the angle is ____.

A. acute B. right C. obtuse D. straight

_____ 25. Which of the following represents the distance d between the two points $A(x_1, y_1)$ and $B(x_2, y_2)$?

A. $AB = \sqrt{(x_2 - x_1)^2 - (y_2 - y_1)^2}$
B. $AB = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
C. $AB = \sqrt{(x_2 + x_1)^2 + (y_2 + y_1)^2}$
D. $AB = \sqrt{(x_2 + x_1)^2 - (y_2 + y_1)^2}$

_____ 26. Point L is the midpoint of $\overline{KM}$. Which of the following is true about the distances among K, L, and M?

A. $LM = KM$
B. $KL = LM$
C. $KL = KM$
D. $2|KM| = KL + LM$

_____ 27. What is the distance between the points $P(-2, 6)$ and $Q(-7, 7)$?

A. $2\sqrt{6}$ B. 4 C. $2\sqrt{26}$ D. $\sqrt{26}$

_____ 28. Which of the following equations describes a circle on the coordinate plane with a radius of 4 units?

A. $(x + 2)^2 - (y - 2)^2 = 4^2$
B. $(x + 2)^2 + (y - 2)^2 = 4^2$
C. $(x - 4)^2 + (y - 4)^2 = 2^2$
D. $(x - 4)^2 + (y - 4)^2 = 16^2$

_____ 29. 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)

_____ 30. The coordinates of the vertices of a square are $H(3, 8)$, $I(15, 8)$, $J(15, -4)$, and $K(3, -4)$. What is the length of a diagonal of the square?

A. 4 B. 8 C. 12 D. $12\sqrt{2}$

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