SECOND PERIODICAL TEST IN GRADE 10 MATHEMATICS

Name:	Date:
Grade &Section:	Score:

DIRECTIONS:Encircle the letter of the correct answer and write it in the space provided before the number. Read and analyze the questions so you can get a higher score.

1. In the polynomial function defined by	$f(x) = a_n x^n$	$+a_{n-1}x^{n-1}$	$^{1} + a_{n-2}x^{n-2}$	$+ + a_2 x^2$	$+a_1x + a_0$ for	or
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what set of values is n?

- A. rational number
- B. integer

- C. whole number
- D. counting number

2. Which of the following is a fourth degree polynomial function?

A.
$$f(x) = 4 - 4x + 4x^2$$

C.
$$f(x) = 3x^{-4} + 2x^2 - 4$$

B.
$$f(x) = 3^4 x + 25$$

D.
$$f(x) = -3x^4 + x^2 - 10$$

3. What is the leading coefficient of the polynomial function
$$f(x) = 9 - 2x + 6x^2 + 4x^3$$
?

B. 4

C. 6

- D. 9
- _4. Which of the following is TRUE about the graph of the function $f(x) = (3x 2)(x + 4)(-x + 1)^2$?
 - I. There are three turning points.
 - II. The behavior of the end part is both rising.
 - III. The x-intercepts are 1, -4, and $\frac{2}{3}$.

A. I

B. II

C. III

D. all of the above

For number 5-7, refer to the table given.

	(-∞,-2)	(-2 , 2)	(2 , 4)	(4,∞)
(x+2)	-	+	+	+
(x-2)	-	-	+	+
(x-4)	-	-	-	+
(x+2) (x-2) (x-4)	-	+	-	+

5. Which polynomial function best described the table of signs?

A.
$$f(x) = x^3 - x^2 - 4x - 16$$

C.
$$f(x) = x^3 - 4x^2 - 4x + 16$$

B.
$$f(x) = x^3 - 4x^2 - 4x - 16$$

D.
$$f(x) = x^3 - x^2 - 4x + 16$$

6. For what interval/s is the function above the x-axis?

- A. (2, 4) and (4, ∞)
- B. (-∞,-2) and (-2, 2)
- C. (-2 , 2) and (4 , ∞)
- D. $(-\infty, -2)$ and (2, 4)

- 7. For what interval/s is the function below the x-axis?
- A. (2, 4) and $(4, \infty)$
- B. (-∞,-2) and (-2, 2)
- C. (-2, 2) and (4, ∞)
- D. (-∞,-2) and (2, 4)

8. In the figure at the right, which polynomial function best describes the graph?

A.
$$f(x) = x(x + 1)(x - 2)$$

B.
$$f(x) = -x(x + 1)(x - 2)$$

C.
$$f(x) = x^2(x + 1)(x - 2)$$

D.
$$f(x) = -x^2(x+1)(x-2)$$

__9. Which polynomial function crosses the y-axis at 3?

A.
$$f(x) = -2x^3 + 5x^2 - x - 3$$

B.
$$f(x) = 3x^3 + 5x^2 - x + 3$$

C.
$$f(x) = 6x^3 + 5x^2 - x - 3$$

D.
$$f(x) = 3x^3 + 5x^2 - x - 9$$

10. It is used to determine whether the graph of the zeros of polynomial function crosses or touches the x-axis.

- B. sign of leading coefficient
- C. turning points
- D. multiplicity of zeros

For numbers 11-12

The production department of spare parts and accessories of Honda Motors determines that the number of assorted products that did not pass the quality standard can be modeled by the function $P(x) = x^3 - 2x^2 + x + 2$ where x represents the number of assorted products manufactured per week in hundreds.

_____11. How many products did not pass the quality standard if they manufactured 300 pieces of spare parts and accessories?

A. 2

B. 4

C. 14

D. 38

_____12. The table below shows the relation of the products manufactured to the products that did not pass the quality standard.

x (in hundreds)	1	2	3	4
P(x)	2	4	14	38

If the production manager wants to maximize production but minimize its reject products, how many assorted pieces should they manufactured per week?

A. 100

B. 200

C. 300

D. 400

 $_{--}$ 13. For what set of values of a and n will you consider so that the function

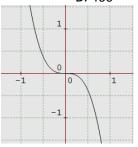
 $f(x) = ax^n$ could define the graph on the right?

A. a is negative, n is odd

B. a is negative, n is even

C. a is positive, n is odd

D. a is positive, n is even



____14. Edna wants to help her classmate in sketching the graph of $f(x) = x^4 - 16$ using The Leading Coefficient Test. What clue should she give?

A. The graph falls to the left and rises to the right

C. The graph rises to the left and falls to the right

B. The graph rises to both left and right

D. The graph falls to both left and right

b. The graph rises to both left and right

15. What do you call the set of all points on a plane equidistant from a fixed point called the center?

A. circle

B. equiangular

C. equilateral

D. regular polygon

16. What do you call an angle whose measure is equal to the measure of its intercepted arc?

A. inscribed angle

B. central angle

C. circumscribed angle

D. intercepted angle

___17. What do you call the part of the circumference of a circle intercepted by central angle?

A. chord

B. secant

C. arc

D. intercepted angle

18. The measure of the longest chord on a circle is 20 cm. What is the measure of its radius?

Δ 5 cm

B. 10 cm

C. 15 cm

D. 20 cm

____19. What kind of inscribed triangle is formed when its longest side is the diameter of a circle?

A. acute triangle determine

B. right triangle

C. obtuse triangle

D. cannot be

For numbers 20-22, refer to the figure below.

 \overline{AC} and \overline{BD} are diameters of circle O.

AO = 10 cm

_20. What is the degree measure of arc AD?

A. 45°

C. 90°

B. 60°

D. 100°

_21. Which statement is NOT TRUE about the chords \overline{AD} and \overline{CD} ?

D.

A. AD = CD

B. $\overline{AD} \cong \overline{CD}$

C. AD + CD = AC

 $AD = CD = 10\sqrt{2}$

___22. What is the length of arc AD?

A. $\frac{\pi}{2}$

Β. 5π

C. 10π

D. 20π

23. What is the region bounded by central angle and its intercepted arc?

For numbers 24-25, refer to the figure on the right.

24. In the figure on the right, if the measure of arc AC is 78° , what is the measure of $\angle ADC$?

A. 19.5°

C. 58°

B. 39°

D. 78°

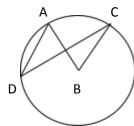
____25. If $m \angle ADC = 21^{\circ}$, what is the measure of $\angle ABC$ of circle B?

A. 10.5°

C. 42°

B. 21°

D. 84°



26. Quadrilateral ABCD is inscribed in a circle. What is the sum of the measures of two opposite angle of the quadrilateral?

A. 90°

B. 135°

C. 180°

D. 360°

_____27. Point A is an external point of circle X. How many lines you could possibly draw that is tangent to circle X and passes through point A?

A. 1

B. 2

D. 3

D. infinite

For numbers 28-31

In the figure, \overline{UV} is tangent to circle X at C.

 \overline{EV} is a secant passing through the center of the circle at X.

 $\underline{\hspace{0.3cm}}$ 28. If the measure of arc AC= 146° and the measure of arc

- $CD = 84^{\circ}$, what is the measure of $\angle AUV$?
- A. 31°

C. 62

B. 42°

D. 73°

_____29. If BY = 10, EY = 3, and AY = 8, what is DY?

A. 3

B. 3.75

C. 4

D. 5

_____30. What is the measure of $\angle EYD$ if the measure of arc ED= 24° and the measure of arc $AB=88^{\circ}$?

Δ 31

R 44°

C. 56°

D. 61°

____31. What is AD if UA = 9 and UC = 6?

A. 3

B. 4

C. 5

D. 6

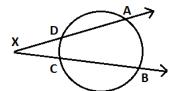
_____32. In the figure, AX^{\leftarrow} and BX^{\leftarrow} are secant of circle O. Which of the following statements is TRUE?

A. AX(BC) = BX(AD)

C. AD(AX) = BC(BX)

 $B \cdot AX(DX) = BX(CX)$

D. AD(DX) = BC(CX)



_____33. Which of the following is perpendicular to a line tangent to a circle at the point of tangency?

A. arc

B. chord

C. radius

D. secant

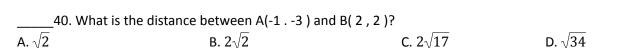
34. What is the appropriate term for the given figure at the right?

- A. common internal tangent
- C. externally tangent circles
- B. common external tangent
- D. internally tangent circles



_____35. If two tangent segments are drawn to a circle from an external point, then the two tangent segments are

A. congruent	B. parallel	C. perpendicular	D. similar
36. The angle be	etween two secants intersectin	g in the exterior of the circle is 80°.	If one of the intercepted arcs
is 200°, what is the me	easure of the other arc?		
A. 30°	B. 40°	C. 50°	D. 60°
37. Which of the	e following equations is TRUE a	bout the distance d between the po	oints (1, 1) and (3, -4)?
A. $d = \sqrt{(1-3)^2 + }$	$(1-4)^2$	C. $d = \sqrt{(1+3)^2 + (1+3)^2}$	+ 4) ²
B. $d = \sqrt{(1-3)^2 + }$	$(1+4)^2$	D. $d = \sqrt{(1 + \frac{1}{2})^2}$	$(-3)^2 + (1-4)^2$
38. Three points of C?	A. B and C are collinear. Point	B is midpoint of \overline{AC} . If A(2, 0) and I	3(6. 0), what is the coordinate
A. (4. 0)	B. (-2, 0)	C. (8, 0)	D. (10, 0)
39. What is the	value of x if the points $X(2, 3)$,	Y(5, 6), and $Z(x, 0)$ forms a right tr	riangle with right angle at X?
Λ 2	р Э	\mathcal{C} Λ	D E



- 41. Quadrilateral PQRS is an isosceles trapezoid, with side \overline{PQ} parallel to side \overline{RS} . Which of the following
- statement is NOT TRUE about quadrilateral PQRS? A. PR = QS B. PS = QR C. $\angle P = \angle R$ D. PS = QR
- _____42. Find the distance between the origin and (3,4)
 A. 3 B. 4 C. 5 D. 7
- _____43. If ABCD is a rectangle, A(-6,1), B(-4,6), C(6,2), what should be the coordinates of D?

 A. (4,3)

 B. (4,-3)

 C. (-4,3)

 D. (-4,3)
- _____44. What is the coordinates of the other endpoint of a line segment with one endpoint at (6,2) and midpoint at (-4,-1)?

 A. (2,1)

 B. (10,3)

 C. (7,2)

 D. (-14,-4)
- _____45. What is the midpoint between (2,2) and (4,2)?
 A. (3, 2)
 B. (2,3)
 C. (4, 2)
 D. (2,4)

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KEY TO CORRECTION

1	С	16	В	31	В
2	D	17	С	32	В
3	В	18	В	33	С
4	D	19	В	34	D
5	С	20	С	35	Α
6	С	21	С	36	В
7	D	22	В	37	В
8	С	23	В	38	D
9	В	24	В	39	С
10	D	25	В	40	D
11	С	26	С	41	С
12	В	27	В	42	С
13	Α	28	Α	43	В
14	В	29	В	44	D
15	Α	30	С	45	Α