NAT Grade 10 Reviewer

Mathematics

Part 2

1. Which of the following is an example of a polynomial function?

A. Quadratic function

B. Exponential function

C. Trigonometric function

D. Logarithmic function

Answer: A

2. What is the leading coefficient of the polynomial function $f(x) = 5x^2 + 3x^5 + 7x - 2$?

A. 1

B. 2

C. 3

D. 4

Answer: 3

3. How should the polynomial function $f(x) = 11x + 6x^2 + x^3 + 6$ be written in standard form?

A. $f(x) = 6x^2 + 11x + x^3 + 6$

B. $f(x) = x^3 + 6x^2 + 11x + 6$

C. $f(x) = 6 + 11x + 6x^2 + x^3$

D. $f(x) = 6 + x^3 + 6x^2 + 11x$

Answer: B

4. What is the degree of $f(x) = x(x + 3)(x + 2)$?

A. 1

B. 2

C. 3

D. 4

Answer: 3

5. What is the value of the constant term of the polynomial function P(x) = 2x^4 – 13x^3 + 30x^2 - 28x + 8?

A. 2

B. 8

C. -13

D. 30

Answer: 8

6. P(x) = anxn + an-1xn-1 + an-2xn-2 + ... + a1x + a0, an ≠ 0, where n is _____.

A. an integer greater than or equal to zero and the coefficients are real numbers.

B. an integer and the coefficients are real numbers.

C. any real number and the coefficients are all positive real numbers.

D. any real number and the coefficients are all negative real numbers

Answer: A

7. Which of the following is NOT a polynomial function?

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

B. f(x) = (x - 5)(9x + 1)^2(x - 4)

C. f(x) = x - 3 + 2x^2 - 7

D. f(x) = 2x^4 + x^5 - 3

Answer: D

8. What do you call the coefficient of the leading term of P(x)?

A. Degree

B. X

C. Leading coefficient

D. Constant

Answer: Leading coefficient

9. What is the degree of the polynomial function f(x) = x^4 - x^3 - 3x^2 - 3x - 18?

A. 1

B. 2

C. 3

D. 4

Answer: 4

_____10. A shopkeeper determines that its profit, P, in pesos, can be modeled by the function P(x) = 6x^2 – 7x – 5, where x represents the number of shirts sold. What is the profit at x = 150?

A. Php 136,055

B. Php 133,945

C. Php 2855

D. Php 1800

Answer: Php 133,945

11. It is a distance from the center to any point on the circle.

A. Radius

B. Circumference

C. Diameter

D. Perimeter

Answer: Radius

12. The distance between any two points on the circle which do not pass through the center.

A. Radius

B. Circumference

C. Chord

D. Diameter

Answer: Chord

13. An angle formed by two rays whose vertex is the center of the circle.

A. Arc

B. Central angle

C. Sector

D. Segment

Answer: Central angle

14. It is an arc with a measure equal to one-half the circumference of a circle.

A. Minor arc

B. Major arc

C. Central angle

D. Semicircle

Answer: Semicircle

15. An arc with a measure less than a semicircle.

A. Minor arc

B. Major arc

C. Central angle

D. Semicircle

Answer: Minor arc

16. It is the intersection of a tangent line and a circle.

A. Point of intersection

B. Point of tangency

C. Point of boundary

D. Point of reference

Answer: Point of tangency

17. The region is bounded by an arc of the circle and two radii to the endpoints of the arc.

A. Segment

B. Tangent line

C. Secant line

D. Sector

Answer: Sector

18. A line that intersects the circle at two points.

A. Segment

B. Tangent line

C. Secant line

D. Sector

Answer: Secant line

19. The region is bounded by an arc of a circle and the segments joining its endpoints.

A. Chord

B.Sector

C. Segment

D. Tangent

Answer: Segment

20. A line that intersects the circle at exactly one point.

A. Tangent

B. Secant

C. Diameter

D. Chord

Answer: Tangent

21. A Latin word for secant which means to cut.

A. Telecare

B. UAT

C. Decare

D. Secare

Answer: Secare

22. Consider this Revenue-Advertising Expense situation.

A drugstore that sells a certain brand of vitamin capsule estimates that the profit P (in pesos) is given by P = -50x^3 + 2400x^2 - 2000, 0 ≤ x ≤ 32 where x is the amount spent on advertising (in thousands of pesos). An advertising agency provides four (4) different advertising packages with costs listed below. Which of these packages will yield the highest revenue for the company?

A. Package A: Php 8,000.00

B. Package B: Php 16,000.00

C. Package C: Php 32,000.00

D. Package D: Php 48,000.00

Answer: Package C: Php 32,000.00

23. A car manufacturer determines that its profit, P, in thousands of pesos, can be modeled by the function P(x) = 0.00124x^4 + x - 3, where x represents the number of cars sold. What is the profit at x = 150?

A. Php 75.28

B. Php 632,959.50

C. Php 3,000,000.00

D. Php 10,125,297.00

Answer: Php 10,125,297.00

24. A demographer predicts that the population, P, of a town t years from now can be modeled by the function P(t) = 6t^4 - 5t^3 + 200t + 12,000. What will the population of the town be two (2) years from now?

A. 12,456

B. 124,560

C. 1,245,600

D. 12,456,000

Answer: 1,245,600

25. Which angle has its vertex on a circle and has sides that contain chords of the circle?

A. Central angle

B. Inscribed angle

C. Circumscribed angle

D. Intercepted angle

Answer: Inscribed angle

26. A circle with a 5 cm-radius has an arc that measures 30°. What is the measure of its arc length? Note: π = 3.14

A. 2.62 cm

B. 2.3 cm

C. 1.86 cm

D. 1.5 cm

Answer: 2.62 cm

27. What is the sum of the measures of the central angles of a circle with no common interior points?

A. 120°

B. 240°

C. 360°

D. 480°

Answer: 360°

28. What do you call the shaded region of circle A?

A. Area

B. Pi

C. Sector

D. Segment

Answer: Segment

29. Given circle A, what kind of arc is angle DMY if DY is a diameter?

A. Circle

B. Minor arc

C. Major arc

D. Semicircle

Answer: Semicircle

30. Given circle A with a semicircle YSD and m∠SAD = 70°, what is the measure of ∠SAY?

A. 20°

B. 70°

C. 110°

D. 150°

Answer: 110°