NEWFOUNDLAND AND LABRADOR MATHEMATICS 2200 · FINAL EXAM · 50 QUESTIONS

Final Exam — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **In a right triangle, an angle measures 30° and the hypotenuse is 10. The side opposite the angle, to one decimal place, is about**

- A 5
- B 6.30
- C 3.70
- D 7.70

Understand It with Pulse | Flag a mistake

2 **The vertex of the parabola $y = (x - 3)^2 + -1$ is**

- A (3, -1)
- B (-3, -1)
- C (3, 1)
- D (-3, 1)

Understand It with Pulse | Flag a mistake

3 The value excluded from the domain of $f(x) = \frac{1}{x - 5}$ is

- **A** x = -5
- **B** x = 0
- **C** x = 5
- **D** x = 1

Understand It with Pulse | Flag a mistake

4 The sum of the first 6 terms of the arithmetic sequence with first term 4 and common difference 4 is

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **The solution of $2x + 2 < 10$ is**

- A $x > 4$
- B $x < -4$
- C $x < 4$
- D $x > -4$

Understand It with Pulse | Flag a mistake

6 **The exact value, to three decimal places, of $\sin 45°$ is**

- A 0.5
- B 0.866
- C 1
- D 0.707

Understand It with Pulse | Flag a mistake

7 **The axis of symmetry of $y = x^2 + 6x + 3$ is**

- **A** x = -3
- **B** x = -1
- **C** x = 3
- **D** x = -5

Understand It with Pulse | Flag a mistake

8 **Check the definition first . The graph of y = 1 / (x - 2) has a vertical asymptote at**

- **A** x equals 0
- **B** y equals 2
- **C** x equals 2
- **D** y equals 0

Understand It with Pulse | Flag a mistake

9 **The sum to infinity of the geometric series with first term 20 and common ratio $\frac{1}{4}$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **Check the definition first. The solution region of y greater than 2x plus 1 is**

A below the line y equals 2x plus 1

B on the line only

C above the line y equals 2x plus 1

D to the left of the line only

Understand It with Pulse | Flag a mistake

11 **Two sides of a triangle measure 6 and 8 with included angle 60°. The third side, to one decimal place, is about**

- A 7.2
- B 8.40
- C 6
- D 9.60

Understand It with Pulse | Flag a mistake

12 **Apply the rule . Compared with $y = x^2$, $y = 3x^2$ is**

- A narrower
- B wider
- C shifted left by 3
- D shifted down by 3

Understand It with Pulse | Flag a mistake

13 The value of $\frac{x + 2}{x - 1}$ when x = 4 is

ANSWER _____

Understand It with Pulse | Flag a mistake

14 A quantity starts at 5 and multiplies by 3 each step. After 3 steps, its value is

ANSWER _____

Understand It with Pulse | Flag a mistake

15 Which point satisfies x + y ≤ 10 and x ≥ 3 ?

A (2, 5)

B (4, 8)

C (4, 5)

D (9, 9)

Understand It with Pulse | Flag a mistake

16 **Start from the definition. In a right triangle, the tangent of an acute angle equals**

A adjacent side divided by opposite side

B hypotenuse divided by opposite side

C opposite side divided by hypotenuse

D opposite side divided by adjacent side

Understand It with Pulse | Flag a mistake

17 **For y = 1x² + 4x + 4 the number of real x intercepts is**

A 1 real root

B 2 distinct real roots

C no real roots

D infinitely many x intercepts

Understand It with Pulse | Flag a mistake

18 **The value of the square root of 36 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **An arithmetic sequence starts 2, 8. Its term number 10 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **Solve x + y = 8 and x - y = 6. The value of x is**

A 1

B 8

C 7

D 6

Understand It with Pulse | Flag a mistake

21 **From a point 20 m from the base of a tower, the top of the 20 m tower is sighted. The angle of elevation, to the nearest degree, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **The x coordinate of the vertex of $y = x^2 + 10x$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **Solve $\sqrt{x + 1} = 5$ for x. The value of x is**

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **Consider the concept in general. In an arithmetic sequence, the difference between consecutive terms is**

A increasing

B decreasing

C constant

D zero

Understand It with Pulse | Flag a mistake

25 **A group has 20 items. Type A costs 6 dollars and type B costs 2 dollars, for a total of 100 dollars. The number of type A items is**

ANSWER _____

Understand It with Pulse | Flag a mistake

26 **A balloon is 12 m above the ground. From an observer, the angle of elevation is 30°. The horizontal distance to the point below the balloon, to one decimal place, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

27 **The maximum value of $y = -x^2 + 2x + 5$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

28 **The coefficient in simplest form of $3\sqrt{3} + 5\sqrt{3}$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

29 **An arithmetic sequence has first term 3 and second term 11. Its common difference is**

ANSWER _____

Understand It with Pulse | Flag a mistake

30 **Apply the principle . The system x + y = 3 and x + y = 5 has**

- A one solution
- B infinitely many solutions
- C no solution
- D two solutions

Understand It with Pulse | Flag a mistake

31 **The right triangle shown has legs 12 and 9. Its hypotenuse is**

- A 17
- B 13
- C 19
- D 15

Understand It with Pulse | Flag a mistake

32 **The graph shown is a parabola with vertex (-1, 2). Its equation is**

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

Understand It with Pulse | Flag a mistake

33 **Recall the idea . The graph of y = 1 / (x - 2) has a vertical asymptote at**

- **A** x equals 0
- **B** x equals 2
- **C** y equals 2
- **D** y equals 0

Understand It with Pulse | Flag a mistake

34 **The sum to infinity of the geometric series with first term 18 and common ratio $\frac{1}{3}$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **Recall the idea. The solution region of y greater than 2x plus 1 is**

A below the line y equals 2x plus 1

B above the line y equals 2x plus 1

C on the line only

D to the left of the line only

Understand It with Pulse | Flag a mistake

36 **Recall the rule. In which quadrant is the cosine negative and the sine positive?**

A Quadrant I

B Quadrant III

C Quadrant IV

D Quadrant II

Understand It with Pulse | Flag a mistake

37 **Think about the property. The range of $y = (x - 1)^2 + -4$ is**

A $y \leq -4$

B $y \geq -4$

C $y \geq 1$

D $y \leq 1$

Understand It with Pulse | Flag a mistake

38 **Think about the property. The value of $\frac{x + 2}{x - 1}$ when x = 4 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **Think about the property. A quantity starts at 10 and multiplies by 2 each step. After 5 steps, its value is**

ANSWER _____

Understand It with Pulse | Flag a mistake

40 **Think about the property. Which point satisfies x + y ≤ 10 and x ≥ 3 ?**

A (2, 5)

B (4, 5)

C (4, 8)

D (9, 9)

Understand It with Pulse | Flag a mistake

41 **In a triangle, angle A measures 30°, side a is 14, and angle B measures 60°. Side b, to one decimal place, is about**

A 25.30

B 23.10

C 26.50

D 24.2

Understand It with Pulse | Flag a mistake

42 **The vertex of the parabola $y = (x - 1)^2 + 5$ is**

A (1, 5)

B (-1, 5)

C (1, -5)

D (-1, -5)

Understand It with Pulse | Flag a mistake

43 **The value of the square root of 16 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

44 **An arithmetic sequence starts 5, 7. Its term number 9 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

45 **Solve x + y = 7 and x - y = 3. The value of x is**

A 2

B 5

C 7

D 3

Understand It with Pulse | Flag a mistake

46 **From a point 17 m from the base of a tower, the top of the 10 m tower is sighted. The angle of elevation, to the nearest degree, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

47 **The x coordinate of the vertex of $y = x^2 + -6x$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

48 **Solve $\sqrt{x + 1} = 4$ for x. The value of x is**

ANSWER _____

Understand It with Pulse | Flag a mistake

49 **Consider the statement in general. In an arithmetic sequence, the difference between consecutive terms is**

A increasing

B constant

C decreasing

D zero

Understand It with Pulse | Flag a mistake

50 **A group has 16 items. Type A costs 4 dollars and type B costs 7 dollars, for a total of 82 dollars. The number of type A items is**

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	A	**18.**	6	**35.**	B
2.	A	**19.**	56	**36.**	D
3.	C	**20.**	C	**37.**	B
4.	84	**21.**	45	**38.**	2
5.	C	**22.**	-5	**39.**	320
6.	D	**23.**	24	**40.**	B
7.	A	**24.**	C	**41.**	D
8.	C	**25.**	15	**42.**	A
9.	26.7	**26.**	20.8	**43.**	4
10.	C	**27.**	6	**44.**	21
11.	A	**28.**	8	**45.**	B
12.	A	**29.**	8	**46.**	30
13.	2	**30.**	C	**47.**	3
14.	135	**31.**	D	**48.**	15
15.	C	**32.**	B	**49.**	B
16.	D	**33.**	B	**50.**	10
17.	A	**34.**	27		

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