NEWFOUNDLAND AND LABRADOR MATHEMATICS 3200 · 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 **The point (0, -2) lies on the graph of f . Under y = 3f(x - 3) + 2 , its image is**

- A (-3, -4)
- B (3, -8)
- C (3, 0)
- D (3, -4)

Understand It with Pulse | Flag a mistake

2 **If f(x) = 4x + 3 and g(x) = x² , then (f ° g)(x) is**

- A $4x^2$
- B $(4x + 3)^2$
- C $4x + 3$
- D $4x^2 + 3$

Understand It with Pulse | Flag a mistake

3 The exact value of cos 60° is

- **A** $\sqrt{3}/2$
- **B** 1
- **C** 0
- **D** $\frac{1}{2}$

Understand It with Pulse | Flag a mistake

4 $\log_2 256$ is

ANSWER _____

Understand It with Pulse | Flag a mistake

5 4! is

ANSWER _____

Understand It with Pulse | Flag a mistake

6 The vertex of the parabola $y = (x + 4)^2 - 1$ is

- A (4, -1)
- B (-4, 1)
- C (-1, -4)
- D (-4, -1)

Understand It with Pulse | Flag a mistake

7 If $f(3) = 6$ and $g(3) = 2$, then $(\frac{f}{g})(3)$ is

ANSWER _____

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8 The exact value of cos 180° is

- **A** 1
- **B** -1
- **C** 0
- **D** $\frac{1}{2}$

Understand It with Pulse | Flag a mistake

9 $\log_{10} 1000$ is

ANSWER _____

Understand It with Pulse | Flag a mistake

10 P(9, 3) is

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **The point (1, 4) lies on the graph of f . Under y = 3f(x - 2) + 1 , its image is**

- A (-1, 13)
- B (3, 13)
- C (3, 11)
- D (3, 5)

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12 **The inverse of f(x) = 5x + 10 is**

- A x + 10/5
- B 5x + 10
- C $\frac{x}{5}$
- D x - 10/5

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13 **In the interval $0° \leq x \leq 360°$, the solutions of $\sin x = 0$ are**

A 30 degrees only

B 90 degrees only

C 0 degrees, 180 degrees and 360 degrees

D 0 degrees and 90 degrees

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14 **An investment of 1000 dollars grows at 5 percent per year, compounded annually. After 3 years it is worth, in dollars, to two decimal places**

ANSWER _____

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15 **C(9, 5) is**

ANSWER _____

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16 **The graph of y = f(x - 5) + 4 is obtained from the graph of f by a transformation that is**

A shifted right 5 units and up 4 units

B shifted left 5 units and down 4 units

C stretched horizontally by a factor of 3 and shifted right 2 units

D reflected in the y axis and shifted down 2 units

Understand It with Pulse | Flag a mistake

17 **If f(x) = 5x + 1 , then (f ° f)(1) is**

ANSWER _____

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18 The exact value of sin 30° is

- A $\frac{1}{2}$
- B $\sqrt{3}/2$
- C 1
- D 0

Understand It with Pulse | Flag a mistake

19 Simple interest on 400 dollars at 10 percent per year for 3 years is, in dollars

ANSWER _____

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20 A student owns 4 shirts and 3 pairs of pants. The number of different outfits is

ANSWER _____

Understand It with Pulse | Flag a mistake

21 The point (-3, 2) lies on the graph of f . Under $y = 2f(x - 4) + 5$, its image is

A (-7, 9)

B (1, -1)

C (1, 9)

D (1, 7)

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22 If $f(x) = x^2 + 4$ for $x \geq 0$, then $f^{-1}(x)$ is

A $\sqrt{x + 4}$

B $\sqrt{x - 4}$

C $x^2 - 4$

D $\sqrt{x} - 4$

Understand It with Pulse | Flag a mistake

23 **A sector of a circle of radius 4 units has central angle 3 radians. Its area is**

ANSWER

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24 **$\log(a^3)$ is equal to**

A $a \log 3$

B $3 \log a$

C $\log a + 3$

D $\log \frac{a}{3}$

Understand It with Pulse | Flag a mistake

25 **The number of ways to choose a president and a vice president from 15 students is**

ANSWER

Understand It with Pulse | Flag a mistake

26 **The graph of $y = -f(x) + 2$ is obtained from the graph of f by a transformation that is**

- **A** shifted left 5 units and down 4 units
- **B** stretched horizontally by a factor of 3 and shifted right 2 units
- **C** reflected in the x axis and shifted up 2 units
- **D** reflected in the y axis and shifted down 2 units

Understand It with Pulse | Flag a mistake

27 **If $f(x) = -1x + 4$ and $g(x) = x^2$, then $(f \circ g)(x)$ is**

- **A** $-1x^2$
- **B** $(-1x + 4)^2$
- **C** $-1x^2 + 4$
- **D** $-1x + 4$

Understand It with Pulse | Flag a mistake

28 A circle has radius 10 units. An arc subtending a central angle of 0.4 radians has length

ANSWER

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29 The domain of $f(x) = \log(x - 5)$ is

A $x > 5$

B $x \geq 5$

C $x < 5$

D $x \neq 5$

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30 The coefficient of x^3 in the expansion of $(x + 2)^6$ is

ANSWER

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31 **The range of $y = 2(x - 1)^2 + 7$ is**

A $y \geq 7$

B $y \leq 7$

C $y \geq -7$

D $y \leq 0$

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32 **If $f(x) = 1x + 5$ and $g(x) = x + -2$, then $(f \circ g)(1)$ is**

ANSWER _____

Understand It with Pulse | Flag a mistake

33 The exact value of sin 45° is

A $\sqrt{2}/2$

B $\frac{1}{2}$

C $\sqrt{3}/2$

D 1

Understand It with Pulse | Flag a mistake

34 If $e^x = 20$, then x is, to two decimal places

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **Choosing a committee where order does not matter uses**

- A combinations
- B permutations
- C factorials only
- D the fundamental counting principle only

Understand It with Pulse | Flag a mistake

36 **The point (3, 7) lies on the graph of f . Under y = -f(x) , its image is**

- A (3, -7)
- B (-3, 7)
- C (-3, -7)
- D (3, 7)

Understand It with Pulse | Flag a mistake

37 **The domain of f(x) = 1/x + 5 is all real numbers except**

A x = 5

B x = -5

C x = 0

D x = 1

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38 **The period of y = sin(2x) is**

A π

B 2π

C π/2

D π/3

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39 $\log_2 4 + \log_2 8$ is

ANSWER

Understand It with Pulse | Flag a mistake

40 C(7, 0) is

ANSWER

Understand It with Pulse | Flag a mistake

41 The point (-2, 5) lies on the graph of f . Under y = f(-x) , its image is

A (-2, -5)

B (2, 5)

C (2, -5)

D (-2, 5)

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42 **The domain of f(x) = 1/x - 2 is all real numbers except**

- A x = -2
- B x = 0
- C x = 2
- D x = 1

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43 **The phase shift of y = sin(x - π/3) is**

- A left by π/3
- B right by π
- C right by π/3
- D up by π/3

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44 $5^x = 625$. The value of x is

ANSWER

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45 A 3 digit code uses digits, and repetition is allowed. The number of different codes is

ANSWER

Understand It with Pulse | Flag a mistake

46 The range of $y = |(x + 5)| + 1$ is

A $y \leq 1$

B $y \geq 1$

C $y \geq 0$

D $y > 1$

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47 **The domain of f(x) = 1/x - 7 is all real numbers except**

A x = -7

B x = 0

C x = 1

D x = 7

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48 **The period of y = sin(3x) is**

A 2π

B π

C 2π/3

D π/3

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49 A population of 200 triples. The new population is

ANSWER _____

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50 Two fair dice are rolled. The probability the sum is 7 is

A $\frac{1}{6}$

B $\frac{1}{12}$

C $\frac{1}{4}$

D $\frac{1}{36}$

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ANSWER KEY

1.	D	**18.**	A	**35.**	A
2.	D	**19.**	120	**36.**	A
3.	D	**20.**	12	**37.**	B
4.	8	**21.**	C	**38.**	A
5.	24	**22.**	B	**39.**	5
6.	D	**23.**	24	**40.**	1
7.	3	**24.**	B	**41.**	B
8.	B	**25.**	210	**42.**	C
9.	3	**26.**	C	**43.**	C
10.	504	**27.**	C	**44.**	4
11.	B	**28.**	4	**45.**	1000
12.	D	**29.**	A	**46.**	B
13.	C	**30.**	160	**47.**	D
14.	1157.63	**31.**	A	**48.**	C
15.	126	**32.**	4	**49.**	600
16.	A	**33.**	A	**50.**	A
17.	31	**34.**	3		

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