BRITISH COLUMBIA FOUNDATIONS OF MATHEMATICS 11 (MFOM-11) · 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 next term in the pattern 2, 6, 12, 20, 30 is**

- A 36
- B 40
- C 42
- D 48

Understand It with Pulse | Flag a mistake

2 **The y -intercept of the parabola $y = 2x^2 - 3x + 5$ is ____.**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A right triangle has hypotenuse 13 and one leg 5. The other leg is**

- A 18
- B 7
- C 8
- D 12

Understand It with Pulse | Flag a mistake

4 **The median of the data 3, 5, 7, 9, 11 is**

- A 5
- B 7
- C 9
- D 8

Understand It with Pulse | Flag a mistake

5 **Which value is a counterexample to the claim that the square of a number is greater than the number?**

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

Understand It with Pulse | Flag a mistake

6 **The graph shows the parabola $y = x^2 - 4$. The value of y when x = 0 is**

- **A** 0
- **B** 4
- **C** -2
- **D** -4

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7 **In a right triangle, the side opposite an acute angle is 3 and the hypotenuse is 6. The angle measures**

- A 45°
- B 60°
- C 90°
- D 30°

Understand It with Pulse | Flag a mistake

8 **For a normal distribution with mean 100 and standard deviation 15, about 95% of the data lie between**

- A 85 and 115
- B 70 and 130
- C 55 and 145
- D 100 and 130

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9 **Two parallel lines are cut by a transversal. One angle measures 72°. The measure of its corresponding angle is**

- A 18°
- B 108°
- C 72°
- D 144°

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10 **The solution of the system y = x + 2 and y = -2x + 5 is**

- A (0, 2)
- B (3, 5)
- C (1, 3)
- D (2, 4)

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11 **A ramp rises at an angle of elevation of 45°. At a horizontal distance of 20 m from its base, its height, in metres, is**

- A 20
- B 28.3
- C 40
- D 10

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12 **A sample mean is 50 with a margin of error of 4. The confidence interval is**

- A 46 to 54
- B 50 to 54
- C 46 to 50
- D 44 to 56

Understand It with Pulse | Flag a mistake

13 **In triangle ABC, angle A measures 42° and angle B measures 81°. Angle C measures**

- A 57°
- B 67°
- C 47°
- D 123°

Understand It with Pulse | Flag a mistake

14 **Two lines are parallel and distinct. The number of solutions of their system is**

- A 1
- B 2
- C infinitely many
- D 0

Understand It with Pulse | Flag a mistake

15 **A rectangle has area 36. Its minimum possible perimeter is**

- A 36
- B 12
- C 72
- D 24

Understand It with Pulse | Flag a mistake

16 **A survey that asks only people who phone in to a radio show is most likely to suffer from**

- A sampling bias
- B perfect accuracy
- C a larger sample size
- D a normal distribution

Understand It with Pulse | Flag a mistake

17 **The sum of the interior angles of a pentagon is**

A 360°

B 540°

C 720°

D 900°

Understand It with Pulse | Flag a mistake

18 **The domain of the function shown by a graph from x = -2 to x = 5, including both endpoints, is**

A $-2 \leq x \leq 5$

B $-2 < x < 5$

C $-5 \leq x \leq 2$

D $x \geq -2$

Understand It with Pulse | Flag a mistake

19 The maximum value of $P = -2(x - 10)^2 + 50$ is

- A 10
- B -2
- C 100
- D 50

Understand It with Pulse | Flag a mistake

20 A credit card balance of $1000 charges 2% interest in one month. The interest charged that month, in dollars, is

- A 2
- B 20
- C 200
- D 1020

Understand It with Pulse | Flag a mistake

21 **A central angle subtends an arc of 84°. An inscribed angle subtending the same arc measures**

- A 168°
- B 84°
- C 42°
- D 21°

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22 **The points (0, 0), (2, 3), and (4, 6) lie on a line through the origin. The slope of the line is**

- A $\frac{2}{3}$
- B 3
- C 2
- D $\frac{3}{2}$

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23 **In a right triangle, the side opposite an angle is 9 and the adjacent side is 12. The angle, to one decimal place, is about**

- A 41.4°
- B 48.6°
- C 36.9°
- D 53.1°

Understand It with Pulse | Flag a mistake

24 **$1200 invested at 12% per year, compounded monthly, for 1 year grows to about**

- A $1344.00
- B $1352.19
- C $1320.00
- D $1440.00

Understand It with Pulse | Flag a mistake

25 **Which shape is a counterexample to the claim that every quadrilateral has four equal sides?**

A a rectangle that is not a square

B a square

C a rhombus

D an equilateral triangle

Understand It with Pulse | Flag a mistake

26 **The minimum value of $y = x^2 - 2x - 8$ is**

A 1

B 8

C -9

D -8

Understand It with Pulse | Flag a mistake

27 **Two numbers have sum 30. Their maximum possible product is**

A 900

B 225

C 300

D 150

Understand It with Pulse | Flag a mistake

28 **A house costs $300000 and the buyer pays 20% down. The amount borrowed is**

A $240000

B $60000

C $300000

D $360000

Understand It with Pulse | Flag a mistake

29 **A student argues: If a number is divisible by 6, then it is even. The number 14 is even, so it is divisible by 6. This argument is**

- A valid, by deductive reasoning
- B invalid, because it affirms the consequent
- C valid, by inductive reasoning
- D invalid, because 14 is prime

Understand It with Pulse | Flag a mistake

30 **For the line y = 2x - 4, the values of x for which y ≥ 0 are**

- A $x \leq 2$
- B $x \geq -2$
- C $x \leq -2$
- D $x \geq 2$

Understand It with Pulse | Flag a mistake

31 **In a right triangle, an angle measures 45° and the hypotenuse is 10. The side opposite the angle, to one decimal place, is about**

- A 7.1
- B 5.0
- C 10.0
- D 14.1

Understand It with Pulse | Flag a mistake

32 **The mean of the data 5, 10, 15, 20, 25 is**

- A 15
- B 10
- C 20
- D 75

Understand It with Pulse | Flag a mistake

33 **Which value is a counterexample to the claim that the difference of two prime numbers is always odd?**

- **A** 5 - 3 = 2
- **B** 7 - 2 = 5
- **C** 11 - 2 = 9
- **D** 13 - 5 = 8

Understand It with Pulse | Flag a mistake

34 **The y -intercept of the parabola $y = -x^2 + 2x + 7$ is ____.**

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **In a triangle, two sides measure 6 and 8 with included angle 90°. The third side is**

A 2

B 48

C 14

D 10

Understand It with Pulse | Flag a mistake

36 **A sample mean is 80 with a margin of error of 6. The confidence interval is**

A 74 to 86

B 80 to 86

C 74 to 80

D 68 to 92

Understand It with Pulse | Flag a mistake

37 **In a triangle, two angles measure 61° and 44°. The third angle measures**

- A 65°
- B 75°
- C 85°
- D 105°

Understand It with Pulse | Flag a mistake

38 **The graph of y = 3x - 6 crosses the x-axis at**

- A (0, -6)
- B (-2, 0)
- C (6, 0)
- D (2, 0)

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39 **In right triangle XYZ, with the right angle at X, side XY measures 8 and side XZ measures 15. Side YZ measures**

- A 23
- B 7
- C 17
- D 120

Understand It with Pulse | Flag a mistake

40 **The graph shows the growth of $2000 at 10% per year, compounded annually. The value after 1 year, in dollars, is**

- A 2000.00
- B 2200.00
- C 2420.00
- D 2100.00

Understand It with Pulse | Flag a mistake

41 **A central angle measures 120°. An inscribed angle subtending the same arc measures**

- A 240°
- B 120°
- C 60°
- D 30°

Understand It with Pulse | Flag a mistake

42 **The graph of y = -2x + 8 crosses the x-axis at**

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

Understand It with Pulse | Flag a mistake

43 In a right triangle, the side adjacent to an angle is 7 and the hypotenuse is 14. The angle measures

- A 45°
- B 90°
- C 60°
- D 30°

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44 The range of the data 8, 14, 21, 29 is

- A 21
- B 29
- C 8
- D 72

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45 **The converse of the statement If a shape is a square, then it has four equal sides is**

- **A** If a shape has four equal sides, then it is a square
- **B** If a shape is not a square, then it does not have four equal sides
- **C** If a shape does not have four equal sides, then it is not a square
- **D** If a shape is a square, then it does not have four equal sides

Understand It with Pulse | Flag a mistake

46 **The maximum value of $y = -x^2 + 6x - 5$ is**

- **A** 9
- **B** 4
- **C** 6
- **D** -5

Understand It with Pulse | Flag a mistake

47 **The cosine law is needed when a triangle gives**

A two angles and a side

B two sides and the included angle

C one side only

D two sides and a non-included angle

Understand It with Pulse | Flag a mistake

48 **A loan of $4000 at 5% simple interest per year for 3 years costs how much interest?**

A $200

B $600

C $1000

D $4600

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49 The number of sides of a polygon whose interior angle sum is 1440° is

- A 8
- B 9
- C 10
- D 12

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50 For y = 4x - 12, the values of x for which y < 0 are

- A x > 3
- B x < 3
- C x > -3
- D x < -3

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ANSWER KEY

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

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