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Previous Year Paper

Mathematics - 2016



Multiple Choice Questions

1. How many sides does a regular polygon have if its each angle is of measure 108° ?
- A. 6
 - B. 7
 - C. 8
 - D. 5

Answer

2. Two sheets of paper with measure 22 cm by 28 cm are taken. Each sheet is then rolled into a cylinder, one having the height 22 cm and the other of height 28 cm. The difference in their volumes (in cm^3) will be
- A. 216
 - B. 294
 - C. 316
 - D. 0

Answer

3. "Prove that there is no rational number whose square is 2." This type of proof is
- A. proof by contradiction
 - B. proof by counter-example
 - C. proof by contraposition
 - D. direct proof

Answer

4. Representation' in Mathematics does not refer to
- A. expressing an important geometrical result as a theorem
 - B. expressing the given data through graphs
 - C. expressing the number sequence through geometrical patterns
 - D. expressing the relation between two variables as an equation

Answer

5. Which one of the following statements is not true about projects in Mathematics?
- A. They enhance problem-solving skills
 - B. They establish interdisciplinary linkages
 - C. They make scoring easy in Mathematics
 - D. They promote inquiry skills

Answer

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A. - 1431

B. - 913

C. 913

D. 1431

Answer

7. The value of m such that $293 \times 481 - 6 = 292m - 1$ is

A. - 6

B. 0

C. - 4

D. 3

Answer

8. Let $x = 597 \times 10^{22} + 73.5 \times 10^{21}$. When x is expressed in standard form as 6.0435×10^m , then the value of m is

A. 22

B. 23

C. 24

D. 21

Answer

9. If $2m - 12m = 2$, where $m \neq 0$, then the value of $m^2 + 116m^2$ is

A. 212

B. 2

C. 112

D. 4

Answer

10. In which one of the following cases, the construction of a quadrilateral ABCD is not possible ?

A. $BC = 4.5\text{cm}$, $AD = 5.5\text{cm}$, $CD = 5\text{cm}$, $AC = 5.5\text{ cm}$ and $BD = 7\text{ cm}$ B. $AB = 6\text{cm}$, $BC = 9.5\text{cm}$, $\angle A = 75^\circ$, $\angle B = 150^\circ$ and $\angle C = 140^\circ$ C. $AB = 35\text{cm}$, $\angle B = 125^\circ$, $\angle C = 80^\circ$ $BC = 55\text{cm}$ and $CD = 5\text{cm}$ D. $AB = 4\text{cm}$, $BC = 6\text{cm}$, $AC = 8\text{cm}$, $AD = 5.5\text{ cm}$ and $DC = 5\text{cm}$

Answer

11. Let x be the angle which is equal to its complement and y be the angle which is equal to its supplement. Then, $2x + 3y$ is equal toA. 135° B. 270° C. 360° D. 180°

Answer

12. ABCD is a quadrilateral in which $BD = 40\text{ cm}$. The lengths of the perpendiculars drawn from the vertices A and C to the diagonal BD are 16 cm and 24 cm respectively. The area of the quadrilateral ABCD is

A. 560

B. 580 Study, Assignments, Solved Previous Year Papers . Questions and Answers. Free Forever.

C. 600

D. 500

Answer

13. A square and a circle are formed using pieces of wire of length 5024 cm each. The ratio of the area of the square to that of the circle is

A. $4 : \pi$

B. $\pi : 8$

C. $8 : \pi$

D. $\pi : 4$

Answer

14. Anisha and Amit study in Class VII. Anisha told Amit that if the marks in Mathematics of each student in the class are increased by 5, the average would go up by 5. She further says that it is true for all numbers. Amit does not agree and Anisha proves it by taking the case n , instead of 5. Anisha is using

A. deductive logic

B. common sense

C. estimation

D. inductive logic

Answer

15. Using technology based games involving factorization of numbers or formation of new shapes by joining 2D shapes, etc

A. enhances students' ability to understand the concepts better as they are able to explore, observe and infer at their own pace

B. helps teacher to assess students' performance in Mathematics

C. helps teacher to manage students in Mathematics laboratory

D. enhances students' numeracy skills and computational skills

Answer

16. Writing proofs in geometry implies

A. argument or justification of statements

B. description of a geometrical problem

C. steps of drawing a figure

D. two-column table of axioms and deductions

Answer

17. "Two complementary angles are in the ratio $2 : 3$. Find these angles." The above problem from NCERT textbook of Class VII refers to

A. lower order thinking as it is based on using the information in concrete situation

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Answer

18. Consider the following statement "If the diagonals of a quadrilateral bisect each other, then the quadrilateral is a parallelogram." This statement is a/an
- axiom
 - proposition
 - definition
 - theorem

Answer

19. In NCERT exemplar book for Class VIII at the end of Unit 5, Understanding quadrilaterals and practical geometry', lots of activities like constructing tessellation, constructing tangrams, etc., are given. One of the objectives of such tasks is to help
- kinesthetic learners only to improve their visual thinking skills
 - auditory learners only to improve their creative skills
 - all learners with different learning styles and to enhance spatial orientation
 - visual learners only to improve their analytical skills

Answer

20. Which one of the following activities is not appropriate for 'data representation and data interpretation'?
- Survey
 - Debate
 - Newspaper report
 - Project

Answer

21. If $x = 23$ and $y = 34$, then a rational number between $x - y - 1$ and $x - 1 - y - 1$ is
- 23
 - 712
 - 7112
 - 16

Answer

22. If $0.001 + 1.01 + 1.001 - (1.03 \times 0.1) (1) + (1.11 + 0.1) + x = 1.4 \times 110 - 1$, then the value of the x is
- 0.919
 - 0.785
 - 0.758
 - 0.991

Answer

23. If $1056 \times 648x = 18$, then the value of x is

B. 46

C. 58 Study, Assignments, Solved Previous Year Papers . Questions and Answers. Free Forever.

D. 23

Answer

24. What is the value of A such that $5003 \times -34563 = 40 \times A$ is true ?

A. - 3

B. - 12

C. - 15

D. - 2

Answer

25. One of the factors of $x^4 + 4$ is

A. $x^2 + 2$

B. $x^2 + 2x - 2$

C. $x^2 - 2x + 2$

D. $x^2 - 2$

Answer

26. The mean of the five observations $x, x + 2, x + 4, x + 6, x + 8$ is 11. Then, the mean of the first three observations is

A. 12

B. 2

C. 20

D. 9

Answer

27. A bag has 5 red marbles, 4 green marbles and 3 blue marbles. All marbles are identical in all respects other than colour. A marble is taken out from the bag without looking into it. What is the probability that it is a non-green marble?

A. 13

B. 23

C. 712

D. 512

Answer

28. If $AB \times BA = BCB$, where A, B and C stand for just one digit and $A \neq B \neq C$, then the value of $A + B + C$

A. 9

B. 8

C. 6

D. 10

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29. If x , y and z represent the number of faces, number of vertices and number of edges respectively of a polyhedra, then which of the following is true?
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- A. $x + 2 = z - y$
- B. $z - 2 = x - y$
- C. $y - 2 = z + x$
- D. $x - 2 = z - y$

Answer

30. Ravi purchased two articles for ₹ 1500 each. He sold them, gaining 6% on one and losing 4% on the other. His gain/loss per cent in the whole transaction is
- A. gain, 1%
 - B. Loss, 112%
 - C. gain, 2%
 - D. loss, 1%

Answer