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Previous Year Paper

Mathematics - 2016

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Multiple Choice Questions

1. The sum of all possible values of a , for which the 4-digit number $547a$ is divisible by 3, is

- A. 7
- B. 15
- C. 10
- D. 13

Answer

2. A common factor of $x^4 - 256$, $x^3 - 4x^2 + 3x - 12$ and $x^2 - 7x + 12$ is

- A. $x + 4$
- B. $x - 3$
- C. $x - 4$
- D. $x + 3$

Answer

3. When $x = 19$ and $y = -34$, then the value of the expression $81x^2 + 16y^2 - 72xy$ is

- A. 25
- B. 916
- C. 16
- D. 94

Answer

4. Abhi is twice as old as his daughter. Five years ago, his age was four times his daughter's age. If the present age of the daughter is x yr, then

- A. $2x - 5 = 42x - 5$
- B. $2x - 5 = 42x + 5$
- C. $4x - 5 = 2x - 5$
- D. $4x + 5 = 22x - 5$

Answer

5. A sum of Rs. 6250 at 8% per annum, compounded annually, after 234 yr amounts to

- A. Rs 7165.60
- B. Rs 7872.60
- C. Rs 7581.40
- D. Rs 7727.40

Answer

6. The angles of a quadrilateral are in the ratio $2 : 3 : 5 : 8$. The sum of the supplement of the largest angle and the complement of the smallest angle is

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C. 60°

D. 70°

Answer

7. If one angle of a triangle is 110° , then the angle between the bisectors of the other two angles measures

A. 90°

B. 145°

C. 100°

D. 110°

Answer

8. Some students of your class are repeatedly not able to do well in mathematics examinations and tests. As a teacher you would

- A. give more tests for practice
- B. explain the consequences of not doing well
- C. diagnose the causes and take steps for remediation
- D. make them sit with high achievers

Answer

9. In an inclusive Mathematics classroom, what would be your strategy for addressing the needs of visually challenged learners?

- A. Send the learners to a special educator
- B. Design alternate teaching-learning and assessment methods
- C. Offer them another subject in lieu of Mathematics
- D. Pair them with high scorers in Mathematics

Answer

10. Which of the following assessment strategies can be used to assess learner's interest in and attitude to Mathematics?

- A. Checklist, Portfolio, Paper-pencil test
- B. Oral test, Paper-pencil test, Class participation
- C. Checklist, Portfolio, Project, Class participation
- D. Portfolio, Project, Paper-pencil test

Answer

11. A good Mathematics textbook contains a lot of

- A. questions for practice
- B. questions for exploration

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D. theorems and proofs

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Answer

12. Consider the following statement. "Every odd natural number is a prime number." Which of the following methods of "proof can be used to prove/disprove the above statement?
- A. Direct proof
 - B. Method of disproof
 - C. Proof by contrapositive
 - D. Proof by contradiction

Answer

13. Which of the following numbers does not lie between - 56 and 78
- A. - 1724
 - B. 56
 - C. - 34
 - D. - 1112

Answer

14. If $x243 = y867$, where x and y are co-prime numbers, then the value of $(x - y)$ is
- A. 3
 - B. 8
 - C. 4
 - D. 6

Answer

15. On dividing the polynomial $8x^3 - 6x^2 + 10x + 3$ by $4x + 1$, the quotient is $2x^2 + k$, where k is equal to
- A. $3 - 2x$
 - B. $- 3 + 2x$
 - C. $3 + 2x$
 - D. $- 3 - 2x$

Answer

16. In the product of $(9x + 15 - x)$ and $(- 1 - x + x^2)$, if A , B and C are the coefficients of x^3 , x^2 and x respectively, then the value of $(A + B - C)$ is
- A. - 3
 - B. 14
 - C. - 17
 - D. 11

Answer

17. A person marks his goods 40% above the cost price and allows 40% discount on the marked price. His loss/gain percent is

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C. gain, 10%

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D. loss, 16%

Answer

18. Two sides of a right triangle measure 15 cm and 17 cm. Which of the following statements can be true of the length of the third side of the triangle ?

A. It is between 4 cm and 7 cm.

B. It is between 20 cm and 23 cm.

C. It is less than 10 cm

A. Only B

B. A and C

C. A and B

D. B and C

Answer

19. In $\triangle ABC$, $AB = 4\text{ cm}$, $AC = 5\text{ cm}$ and $BC = 6\text{ cm}$. In $\triangle PQR$, $PR = 4\text{ cm}$, $PQ = 5\text{ cm}$ and $RQ = 6\text{ cm}$. $\triangle ABC$ is congruent to

A. $\triangle PQR$

B. $\triangle RPQ$

C. $\triangle PRQ$

D. $\triangle QRP$

Answer

20. A tank is in the form of a cuboid. It holds a maximum of 540 m^3 water. If the tank is 8 m long and 15 m wide, then how many metres, deep must the water be when the tank is full ?

A. 2

B. 4.5

C. 2.5

D. 3

Answer

21. The ratio of the areas of two equilateral triangles is 16 : 9. If the perimeter of the smaller triangle is 63 cm, then how much larger is a side of the larger triangle than a side of the smaller triangle ?

A. 3cm

B. 7cm

C. 4cm

D. 5cm

Answer

22. The area of a triangle is equal to the area of a circle whose perimeter is $6\pi\text{ cm}$. If the base of the triangle is 8 cm, then its corresponding height (in cm)

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C. 2

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D. 2.25

Answer

23. The mean of mode, median and range of the data 2, 1, 2, 3, 3, 6, 4, 8, 14, 9, 4, 8, 4 is

A. 4

B. 9

C. 6

D. 7

Answer

24. Neeta a Class VII Mathematics teacher, assigns a lot of survey-based projects to Mathematics classrooms. The purpose of such activity is

A. to promote problem-solving skills.

B. to give an opportunity to students to collect authentic data.

C. to break the monotony of the classroom.

D. to use it as an alternate assessment.

Which of the above purposes are true?

A. A and B

B. A, B and C

C. A and C

D. A, B and D

Answer

25. 'Problem posing' in Mathematics means

A. raising doubts in the class

B. inability to solve problems

C. solving problems

D. creating problems from the content

Answer

26. Which of the following is not a contributing factor responsible for Mathematics anxiety?

A. Gender

B. Nature of subject

C. Examination system

D. Curriculum

Answer

27. The reciprocal of $38 - 2 \times -45 - 3$ is

A. - 9125

B. $832 \times 5 - 43$

C. 1259

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Answer

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28. If $(132 - 52) \div 2 = 63 \times A$, then the value of A is

- A. 2
- B. 2^4
- C. 2^2
- D. 2^3

Answer

29. Which of the following terms in mathematics is defined?

- A. Line
- B. Point
- C. Diagonal of a quadrilateral
- D. Plane

Answer

30. Which of the following is not an important aspect in 'algebra' ?

- A. Measurement
- B. Visualisation
- C. Transposition
- D. Generalisation

Answer