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Previous Year Paper

Mathematics - 2014

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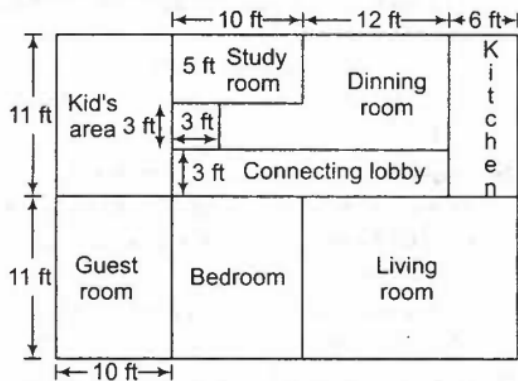
Multiple Choice Questions

1. According to Jean Piaget's theory

- A. exposure to linear equation, techniques of solving it and pair of linear equations are assimilation
- B. introduction of linear equation and learning techniques of solving it are assimilation, and extending the concept to pair of linear equations may raise problem of accommodation
- C. introduction of linear equation and learning techniques of solving it are assimilation, and extending the concept to pair of linear equations may raise problem of accommodation
- D. introduction of pair of linear equations and techniques of solving it are assimilation and connecting it to basics of linear equation is accommodation

Answer

2. Class VI students were given the following layout of a house



The students were asked to find out the

- A. perimeter and area of each room
- B. total perimeter and total area of the house.

The above activity can be used by teacher as formative assessment task because

- A. the students will find the task interesting and will not disturb each other

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It will be easy for teacher to engage all the students for 40 min period

D. the students' responses will help teacher to diagnose their understanding regarding

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finding dimensions, calculations, knowledge of formulae for perimeter and area etc.

Answer

3. Student's ability to apply the concept of square roots in real life situation can be assessed through the following problem.

- A. Find the smallest number that may be subtracted from 5607 to get a perfect square
- B. 2025 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows and number of plants in each row
- C. Find the smallest square number that is divisible by each of the numbers 4, 9 and 10
- D. Calculate the square root of 25600

Answer

4. The value of $0.001 + 1.01 + 0.11$ is

- A. 1.013
- B. 1.121
- C. 1.111
- D. 1.101

Answer

5. In 1999, the population of a country was 30.3 million. The number which is the same as 30.3 million is

- A. 3030000
- B. 3030000000
- C. 303000000
- D. 30300000

Answer

6. The product of two whole numbers is 24. The smallest possible sum of these numbers is

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

Answer

7. The value of $3502 - 35003500 + 2$ is

- A. 8
- B. 16
- C. 2
- D. 4

Answer

8. If $800880 = 8 \times 10^x + 8 \times 10^y + 8 \times 10^z$ where x, y and z are whole numbers, then the value of x Like. Share. Bookmark. Download. Make Notes. Print - Your Favourite Questions. Join www.zigya.com

A. 6

B. 5 Study, Assignments, Solved Previous Year Papers . Questions and Answers. Free Forever.

C. 11

D. 8

Answer

9. One factor of $x^4 + x^2 + 1$ is

A. $x^2 - x + 1$

B. $x^2 - x - 1$

C. $x^2 + 1$

D. $x^2 + x - 1$

Answer

10. The scale of a map is given as 1:10000. On the map, a forest occupies a rectangular region measuring 10 cm x 100 cm. The actual area of the forest (in cm)

A. 10

B. 1

C. 1000

D. 100

Answer

11. The number n is doubled and then y is added to it. The result is, then divided by 2 and the original number n is subtracted from it. The final result is

A. $n + y$

B. $n + y^2$

C. y

D. y^2

Answer

12. 42 cubes each of side 1 cm are glued together to form a solid cuboid. If the perimeter of the base of the cuboid is 18 cm, then its height (in cm)

A. 3

B. 4

C. 1

D. 2

Answer

13. In ΔPQR , $PQ = 4$ cm, $PR = 6$ cm and $QR = 3$ cm. Which of the following is correct

A. $\angle Q = \angle R$

B. $\angle R < \angle P$

C. $\angle R > \angle Q$

D. $\angle Q > \angle R$

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14. In $\triangle ABC$ and $\triangle LMN$, $AB = LM$, $AC = LN$ and $LB = ZM$. Then, the

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A. triangles will be congruent if $\angle B$ is a right angle

B. triangles are congruent only if $AB = AC$

C. triangles cannot be congruent

D. triangles must be congruent

Answer

15. The area of a trapezium-shaped field is 720 m, the distance between the two parallel sides is 20 m and the length of one of the parallel sides is 35 m. The length of the other parallel side is

A. 37m

B. 40m

C. 35m

D. 36m

Answer

16. If the cost price of 10 candles is equal to the selling price of 8 candles, the gain/loss

A. 20%, gain

B. 25%, loss

C. 25%, gain

D. 20%, loss

Answer

17. Under the topic, "Use of exponents to express small numbers in standard form", the following facts are stated

A. the speed of light is 300000000 m/s.

B. the height of the Mount Everest is 8848m.

C. the diameter of a wire on a computer chip is 0.000003m.

D. the size of a plant cell is 0.00001275m.

The above examples are used to express each stated number in standard form. Use aof such examples

A. is made in class to grab the attention of students more interested in Science

B. helps the teacher to identify the bright students

C. shows the accuracy aspect of numbers

D. reflects the inter-disciplinary approach

Answer

18. 'Maths lab activities' can be used for

A. both formative as well as summative assessment

B. selecting students for National Mathematics

Olympiad

C. formative assessment

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Answer

19. As per the NCF, 2005, Study Assignments, Solved Previous Year Papers . Questions and Answers. Free Forever.

- A. narrow aim of teaching Mathematics at school is to develop numeracy-related skill and higher aim is to develop problem-solving skill
- B. narrow aim of teaching Mathematics at school is to teach arithmetic and higher aim is to teach algebra
- C. narrow aim of teaching Mathematics at school is to teach number
- D. narrow aim of teaching Mathematics at school is to teach calculation and higher aim is to teach measurements

Answer

20. According to Bloom's revised taxonomy, the cognitive objective that can be achieved through the following task

"Prepare a powerpoint presentation on contribution of Indian mathematicians," is

- A. analyzing
- B. creating
- C. remembering
- D. understanding

Answer

21. Read the approaches used by the two teachers to teach solving of linear equation, say $2x - 6 = 10$

Teacher A	Teacher B
Steps (a) Take 6 on other (b) Change the sign of 6 and add to 10 (c) Get $2x = 16$ (d) Take 2 on the other side and divide (e) Get $x = 8$	Steps (i) Equation always maintain equality. So, same operation with same number can be performed on both sides to maintain equality (ii) HENCE, $2x - 6 + 6 = 10 + 6 = 2x = 16$ (iii) $2x = 16 \Rightarrow x = 8$

It can be observed that

- A. teacher A focuses on conceptual knowledge while teacher B focuses on procedural knowledge

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C. teacher A emphasizes on instrumental understanding while teacher B emphasizes on relational understanding
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D. teacher A emphasizes on relational understanding while teacher B emphasizes on instrumental understanding

Answer

22. A student writes $10 \text{ cm} \div 12 \text{ cm} = 56 \text{ cm}$
 $15 \text{ cm} \div 15 \text{ m} = 1000 \text{ m}$. This student

- A. can reduce fractions to lowest term correctly and can write the units properly
- B. has concept of units, conversion of units, fractions but missed the concept that ratio does not have units
- C. always commits clerical error of writing unit with ratio
- D. has clear concept of units and their conversion

Answer

23. If $a^3 = 1 + 7$, $3^3 = 1 + 7 + b$ and $4^3 = 1 + 7 + c$, where a , b and c are different positive integers, then the value of $a + b + c$ is

- A. 77
- B. 79
- C. 58
- D. 68

Answer

24. We call a number perfect if it is the sum of all its positive divisors, except itself. e.g., 28 is a perfect number because $28 = 1 + 2 + 4 + 7 + 14$. Which of the following numbers is a perfect number?

- A. 9
- B. 6
- C. 13
- D. 10

Answer

25. Which of the following numbers is a perfect square?

- A. 548543251
- B. 548543241
- C. 548543213
- D. 548543215

Answer

26. A fraction is equivalent to $\frac{58}{8}$. Its denominator 8 and numerator add upto 91. What is the difference between the denominator and numerator of this fraction ?

A. 19

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D. 13

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Answer

27. A polyhedron has 6 faces and 8 vertices. How many edges does it have ?

- A. 14
- B. 15
- C. 10
- D. 12

Answer

28. If

$1957 - a9 \underline{\quad} 18b8$

the sum of the digits a and b is

- A. 13
- B. 12
- C. 15
- D. 14

Answer

29. The mean of median and mode of the data 7, 6, 7, 9, 8, 8, 10, 8 is

- A. 8.5
- B. 9
- C. 5.5
- D. 8

Answer

30. A teacher conducted a debate in the class on the following topic

"Zero is the most significant number."

She encouraged every child to express his/her view on the topic. The teacher is

- A. using her Mathematics class as life-skill class to develop value of argument among the children
- B. inducing problem-solving skill among the children
- C. making her classroom more communicative and reflective
- D. passing her time as students are not in mood of studying

Answer