MATHS

BOOKS - PATHFINDER MATHS (BENGALI ENGLISH)

MATHEMATICAL REASONING

Question Bank

1. Show that sentence"How beautiful you are!"

is not a statement.

Check whether the following sentence is a statement or not : "Every prime number is odd".

2. State with reason the truth value of the statement : " Every parallelogram is a rectangle".

Determine the truth value of the statement :"Delhi is in india and 2+21=5".

3. Write the negation of the statement :

"The sum of 5 and 7 is 11".

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4. Write the negation of following the statement :

"Ramesh is cruel or he is strict".

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5. Write the following implications $(p \Rightarrow q)$ in the form $(\sim P \lor q)$ and hence write the negation of it. "If it rains, the humidity increases"

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6. Write the negation of the statement:"A triangle is equilateral if and only if it has equal angles

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7. Check the validity of the compound statement :If x be a real number such that $2x^3 + 5x = 0$, then $x = 0$ by contrapositive method

8. Write the truth value of the following compound statements"12-9i$(i = \sqrt{-1})$ is a real number or it is a complex number

9. Write the converse conradiction and contrapositive of the statement $\triangle\,ABC \cong \triangle\,DEF$, then1riangle ABC ~ triangle DEF".

10. Write the negation of the following compound statements:"All the students completed their homework and teacher is present"

11. Find the component statements of the compound statements: " There is something wrong with the bulb or with wiring

12. Check the validity of the compound statement "square of an integer is positive or negative"

13. Given below are two statements:

p:25 is a multiple of 5

q:25 is a multiple of 8

Write the compound statement connecting these two statements with 'OR' and check its validiy.

14. Indicate the quantifier in the following statements and comment whether the statement are True or False.

There exists a quadrilateral whose all sides are equal

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15. Indicate the quantifiers in the following statements and comment whether the

statement are True or False.

For all real numbers x, $x^2 > 0$

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16. Check whether the following statement is true or false by proving its contrapositive.

'If x,y are integers such that xy is odd, then both x and y are odd integers'.

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17. Show that that the following statement are true by the method of contapositive.

p:If x is an integer and x^2is even ,then x is also even.

18. Show that that the following statement are true by the method of contapositive.

p:If x is an integer and x^2 is even ,then x is also even.

19. Write the simple statements contains the following compound mathematical statement . Write the true value of the given statements with justification .write the nature of the 'or'..

In hotel ,curd or ice-cream is served with food.

20. Write the simple statements contains the following compound mathematical statement .

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In hotel ,curd or ice-cream is served with food.

21. Write the contrapositive and converse statement of the following statement ,Comment wheather the converse statement are Tue or False .

If a quadrilateral is a rectangle,then its diagonals are equal.

22. Write the contrapositive and converse statement of the following statement ,Comment wheather the converse statement are True or False

Kaveri can solve the problem , so she is an intelligent girl.

23. Write the contrapositive and converse statement of the following statement ,Comment wheather the converse statement are Tue or False .

"A number is divisible by 3 if and only if the sumof its digits is is divisible by 3"

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24. Verify by the method of contradiction that $\sqrt{7}$ is irrational.

25. Check the validity of the statements given below by contradiction method.

"p: the sumof an irrational number and a rational numbers is irrational .

26. By giving an example, show that the following is false:

"If n is an odd integer,then n is prime".

27. By contradiction Method , Prove $n^2 > 16$

where $n > 4$ and n is any real number.