

SUBJECT: MATH

(MOCK TEST PAPER CLST VIII)

1. Evaluate by using identities:

- a. 103×97 c) 1003×997
b. 510×490 d) 72×68

2. The fair to travel 50 km is Rs.500. What is the cost for travelling 250 km?

3. Find the value of:-

- a. $(a+2)(a-2)$ b. $(7+x)(7-x)$ c. $(y-3)(y-4)$

4. Find the volume of cuboid when its dimension is $5pq$, $2qr$; and $3pr$.

5. Find the area of rectangle if its breadth is $(2x-5)$ and length is $(7x-2)$.

6. Find relationship by using Venn diagram.

A = all alphabets of English letter

B = all vowels of alphabet.

7. Factorise:-

- a) $x^2 - 2xy + y^2$ c) $x^4 - 81$
b) $a^4 - 16$

8. Define rational number; whole number, integers;

9. By what number (200^{-1}) should be divided to get (20^{-1}) ?

10. Find the greatest 3 digit, 4 digits, 5 digit and 6 digit number which is a perfect square.

11. The distance between two planets is 2794000000000 km. if a light travels this distance in 15 hours then what is the distance travelled by in one month? Express in standard form.

12. 55 students took part in a sports competition for cricket and football. Out of the total students who participate in both games, 25 win at least one game. 30 won in cricket and 20 won in football. How many students won both games?

13. Find 8 rational number between $\frac{1}{7}$ and $\frac{2}{8}$.

14. Multiply:-

- a) $(5abc - 3a^2b + 2ab^2)(2a + 3b - c)$
b) $(a^2 - 2ab + b^2)(a - b)$
c) $(a + b + c)(a - b + c)$

15. A tap can fill a tank in 12 hours and tap B can empty the tank in 18 hours. If both taps are turned on at same time; then how many time they will take to fill the full tank.

16. The ratio between angles of a triangle is 2; 3:4. Find all angle of triangle.

17. If the ratio between the angles of any quadrilateral is 3:4:5:6. Then find all angles.

18. The diagonals of rectangle intersect at O ; if $\angle ABD=30^\circ$ then find $\angle CBO$, $\angle COB$ and $\angle AOB$.

19. Simplify:-

a) $a(a-b)+ 2(b-c) - 3c(c-a)$

b) $2xy (5a-b)+3yz(b-c)-2(c-a)$

c) $p^2x-q^2(y-2x)-p(2z+ay)-2z$

20. If $x^a = \sqrt[3]{y}$; $y^b = \sqrt[3]{2}$; $z^c = \sqrt[3]{x}$, then find the value of abc.

21. If $a + \frac{1}{a} = 25$, then find $a^2 + \frac{1}{a^2}$ and $a^4 + \frac{1}{a^4}$.

22. If there are 400 students in a hostel. Food provision for 80 days. How long will these provisions last if 100 more students joined the group.

23. If a map's height is directly proportional to original height of building .if height of map is 25 cm and original height of building is 500 cm then find the height of map if original height of another building is 1500 cm.

24. In parallelogram ABCD; if $\angle ACD = 95^\circ$ and $\angle CAD=40^\circ$ then find $\angle A$ and $\angle D$.

25. If a train passes a bridge in 30 seconds which length is 200m long. If speed of train is 60 km/h then find length of train.

26. Show that
$$\frac{(a^x \cdot a^y \cdot a^z)^4}{(a^{x+y})^2 \cdot (a^{y+z})^2 \cdot (a^{z+x})^2} = 1$$

27. Find the Pythagorean triplet in which one number is 15.

28. Find the length of side of a square if its area is 3136 cm^2 .

29. The ratio of two sides of a parallelogram is 7:9. If the perimeter of the parallelogram is 112 cm; then find all lengths of parallelogram.

30. Write the properties of.

i) Parallelogram

ii) Rhombus

iii) Kite

iv) Trapezium.

31. If $x - \frac{1}{x} = 125$, then find the value $x^2 + \frac{1}{x^2}$ and $x^4 + \frac{1}{x^4}$

32. If A and B finish a work in 18 days; B and C finish the same work in 20 days and C and A can finish the work in 25 days. Then find if they work together then in how many days they will take to finish the work? If they work alone then how many times they take for finish one by one?

33. If $2x + 3y = 15$ and $xy = 10$ then find $4x^2 + 9y^2$.

34 Express 121 as the sum of 11 odd numbers.

35. Simplify:-

$2x(y + y^2) + 3y(y + z^2) - 2z(y - x^2)$.