

Math Test – 2

1. If P and Q are two sets and its cardinal number $n(P) = 25$, $n(Q) = 15$, and $n(P \cup Q) = 30$ then $n(P \cap Q)$ is _____?
2. If $n(P - Q) = 21$, $n(Q - P) = 26$ and $n(P \cap Q) = 9$, then find $n(Q)$.
3. If set $P = \{a, b, c, d, e, f, g\}$, $Q = \{a, d, e, f, g, h\}$, then find $P - Q$.
4. If $P = \{a, b, c, d, e, f, g, h\}$, $Q = \{c, d, e, i, k, l, m, n\}$, $R = \{a, f, k, l, v, w\}$, then find $P \cup Q$.
5. If universe set $U = \{10, 20, 30, 40, 50, 60, 70, 80, 90\}$, $P = \{10, 20, 30, 40, 50, 60\}$, $Q = \{40, 60, 80, 90\}$, then find $(P \cap Q)'$.
6. $n(U) = 30$, $n(P') = 15$, and $n(P \cap Q)' = 20$ and $n(Q) = 15$, find $n(Q - P) = ?$
7. Marked price of item is Rs. 600 and it sold for Rs. 520. What is the discount and discount %?
8. Find the single discount equivalent to two successive discounts of 35% and 7%.
9. When 10% G.S.T. is added on the purchase of a doormat of Rs. 150 then, find the buying price of doormat.
10. The man bought a refrigerator for Rs. 45350 including a GST of 12%. Find the price of refrigerator before GST was added.
11. A shopkeeper purchased a BP Machine for Rs. 800. He sells it at a discount of 20% and still makes a profit of 10%. Find its selling price and marked price.
12. The marked price of iron is Rs. 3000. A shopkeeper allows two successive discounts of 15% and 10%. Find the price which a customer must pay for the Refrigerator.
13. Shreyashi invested Rs 20000 in a company, she would be paid interest at 6% per annum compounded annually. Find the amount received by him at the end of 2 years and the interest for the 3rd year.
14. Calculate the difference between the compound interest and the simple interest on Rs 25000 in 3 years at 5% per annum.
15. Sobha borrowed from a bank Rs 2000 to purchase a sewing machine. If the rate of interest is 5% per annum, what is the compound interest that she has to pay after 2 years?
16. When simple interest on Rs 3.3 lakhs at 6.5% per annum is Rs 75075. Find the time?
17. The length and breadth of a rectangular park are in the ratio 3:4. If the area of the park is 4800 square metres, find the cost of surrounding the park with a fence at the rate of ₹2.50 per metre.
18. The area of a trapezium is 400m^2 , the distance between two parallel sides is 20m and one of the parallel sides is 15 m. Find the other parallel side.

19. A cylinder of maximum volume is cut from an iron cuboid of length 21cm and cross-section a square of side 16cm. Find the volume of the cylinder and the volume of the iron wasted.

20. The sum of the radius and height of a cylinder is 35 cm and the total surface area of the cylinder is 1760 cm^2 . Find the height and the volume of the cylinder.