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1. What least value must be assigned to * so that the number $197*5462$ is divisible by 9?

2. Which of the following numbers is divisible by 3?

(i) 541326 (ii) 5967013

3. Evaluate : $(313 \times 313 + 287 \times 287)$.

4. How many numbers between 11 and 90 are divisible by 7?

5. Find the H.C.F. of $2^3 \times 3^2 \times 5 \times 7^4$, $2^2 \times 3^5 \times 5^2 \times 7^3$, $2^3 \times 5^3 \times 7^2$

6. Find the H.C.F. and L.C.M. of 0.63, 1.05 and 2.1.

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7. Two numbers are in the ratio of 15:11. If their H.C.F. is 13, find the numbers.

8. Find the smallest number of five digits exactly divisible by 16, 24, 36 and 54.

9. The traffic lights at three different road crossings change after every 48 sec., 72 sec and 108 sec. respectively. If they all change simultaneously at 8:20:00 hours, then at what time they again change simultaneously.

10. Simplify: $b - [b - (a + b) - \{b - (b - a - b)\} + 2a]$

11. $\frac{4}{15}$ of $\frac{5}{7}$ of a number is greater than $\frac{4}{9}$ of $\frac{2}{5}$ of the same number by 8. What is half of that number?

12. Find the value of $(1 - \frac{1}{3})(1 - \frac{1}{4})(1 - \frac{1}{5}) \dots (1 - \frac{1}{100})$.

13. If $x = 1 + \sqrt{2}$ and $y = 1 - \sqrt{2}$, find the value of $(x^2 + y^2)$.

14. What value will come in place of question mark in the following equation?

(i) $0.006 + ? = 0.6$

(ii) $? + 0.025 = 80$

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15. If $(1 / 3.718) = 0.2689$, Then find the value of $(1 / 0.0003718)$.

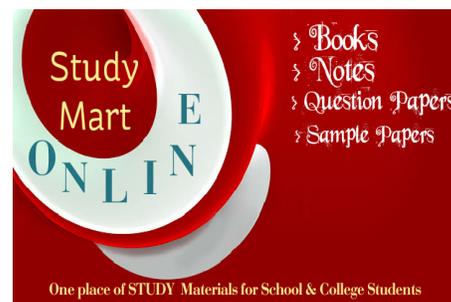
16. Find the value of $\sqrt{0.289 / 0.00121}$

17. If $\sqrt{1 + (x / 144)} = 13 / 12$, then find the value of x.

18. Evaluate: $\sqrt{(9.5 * 0.0085 * 18.9) / (0.0017 * 1.9 * 0.021)}$

19. The average of four consecutive even numbers is 27. Find the largest of these numbers.

20. find the average of first 40 natural numbers?



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21. The average age of a class of 39 students is 15 years. If the age of the teacher be included, then the average increases by 3 months. Find the age of the teacher.
22. Two pens and three pencils cost Rs 86. four Pens and a pencil cost Rs. 112. Find the cost of a pen and that of a pencil.
23. A sum of Rs. 800 amounts to Rs. 920 in 8 years at simple interest rate is increased by 8%, it would amount to how much?
24. A certain sum of money amounts to Rs. 1008 in 2 years and to Rs.1164 in $3\frac{1}{2}$ years. Find the sum and rate of interests.

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25. At what rate percent per annum will a sum of money double in 16 years.
26. The simple interest on a certain sum of money for $2\frac{1}{2}$ years at 12% per annum is Rs. 40 less than the simple interest on the same sum for $3\frac{1}{2}$ years at 10% per annum. Find the sum.
27. The length of a rectangle is twice its breadth. If its length is decreased by 5 cm and breadth is increased by 5 cm, the area of the rectangle is increased by 75 sq. cm. Find the length of the rectangle.
28. A room 5m 55cm long and 3m 74 cm broad is to be paved with square tiles. Find the least number of square tiles required to cover the floor.

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29. If each side of a square is increased by 25%, find the percentage change in its area.
30. Find the area of a right-angled triangle whose base is 12 cm and hypotenuse is 13cm.
31. A man sells 2 flats for Rs 675958 each on one he gains 16% while on the other he losses 16%. How much does he gain/loss in the whole transaction?
32. An uneducated retailer marks all its goods at 50% above the cost price and thinking that he will still make 25% profit, offers a discount of 25% on the marked price. what is the actual profit on the sales?
33. If 36 men can do a piece of work in 25 hours, in how many hours will 15 men do it ?
34. If 9 engines consume 24 metric tonnes of coal, when each is working 8 hours day, how

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much coal will be required for 8 engines, each running 13 hours a day, it being given that 3 engines of former type consume as much as 4 engines of latter type?

35. An aeroplane flies along the four sides of a square at the speeds of 200, 400, 600 and 800 km/hr. Find the average speed of the plane around the field.

36. A sum of Rs. 800 amounts to Rs. 920 in 8 years at simple interest rate is increased by 8%, it would amount to how much?

37. At what rate percent per annum will a sum of money double in 16 years.

38. In what time will Rs. 1000 become Rs. 1331 at 10% per annum compounded annually?

39. The difference between the compound interest and simple interest on a certain sum at 10% per annum for 2 years is Rs. 631. Find the sum.

40. In measuring the sides of a rectangle, one side is taken 5% in excess, and the other 4% in deficit. Find the error percent in the area calculated from these measurements.

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41. While covering a distance of 24 km, a man noticed that after walking for 1 hour and 40 minutes, the distance covered by him was $\frac{5}{7}$ of the remaining distance. What was his speed in m/s?

42. A sum of Rs. 1550 is lent out into two parts, one at 8% and another one at 6%. If the total annual income is Rs. 106, find the money lent at each rate.

43. The difference between the compound interest and the simple interest accrued on an amount of Rs. 18,000 in 2 years was Rs. 405. What was the rate of interest p.c.p.a.?

44. The diameter of the driving wheel of a bus is 140 cm. How many revolutions per minute must the wheel make in order to keep a speed of 66 kmph ?

45. The inner circumference of a circular race track, 14 m wide, is 440 m. Find radius of the outer circle.

46. Find the angle between the hour hand and the minute hand of a clock when 3.25.

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