XI Holiday H.W [Mathematics]

① Find the Sum of all numbers between 200 and 400 which are divisible by 7.

② The Sum of Some terms of G.P is 315 whose first term and common ratio are 5 and 2, respectively. find the last term and the number of terms.

③ If a, b, c, d are in GP, Prove that $(a^n+b^n), (b^n+c^n), (c^n+d^n)$ are in GP.

④ If a and b are the roots of $x^2-3x+p=0$ and c, d are roots of $x^2-12x+q=0$ where a, b, c, d form a GP. PT $(p+q):(q-p)=17:15$

⑤ Find the Sum of ⓐ $5+55+555+\dots$ ⓑ $0.6+0.66+0.666+\dots$

⑥ A man deposited ₹10000 in a bank at the rate of 5% Simple Interest annually. Find the amount in 15th year Since he deposited the amount and also calculate the total amount after 20 years.

⑦ Find the Sum of n terms $\frac{1^3}{1}+\frac{1^3+2^3}{1+3}+\frac{1^3+2^3+3^3}{1+3+5}+\dots$

⑧ Find the equation of a line drawn perpendicular to the line $\frac{x}{4}+\frac{y}{6}=1$ through the point, where it meets the y axis.

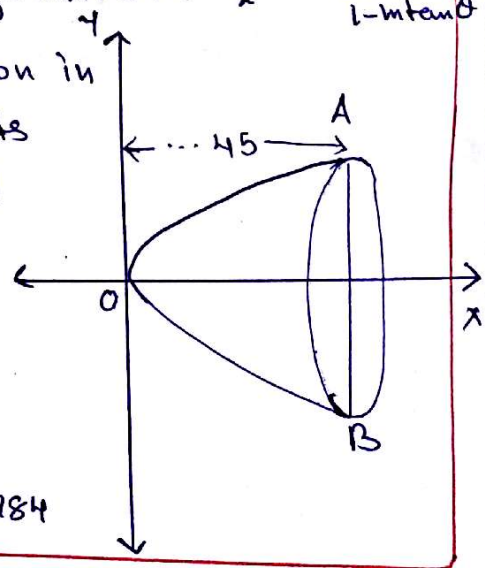
⑨ Find the area of the triangle formed by the lines $y-x=0$, $x+y=0$ and $x-k=0$.

⑩ Find the value of P so that the three lines $3x+y-2=0$, $px+2y=3$ and $2x-y-3=0$ may intersect at one point.

⑪ Find the equation of line passing through the points of intersection of the lines $4x+7y-3=0$ and $2x-3y+1=0$ that has equal intercepts on the axes.

⑫ Show that the equation of the line passing through the origin and making an angle θ with the line $y=mx+c$ is $\frac{y}{x}=\pm\frac{m+\tan\theta}{1-m\tan\theta}$

⑬ The focus of a parabolic mirror as shown in the figure is at a distance of 5cm from its vertex. If the mirror is 45cm deep, find the distance AB.



⑭ Find the equation of hyperbola with Vertex $(\pm 2, 0)$ and foci $(\pm 3, 0)$

⑮ Find length of Latus rectum, eccentricity, foci and Vertices of hyperbola ① $\frac{x^2}{16}-\frac{y^2}{9}=1$ ② $49y^2-16x^2=784$