# St. Mary's School, Dwarka <br> Holiday Homework <br> Class - XI <br> Subject - Mathematics 

From Q1-11, find the derivatives of the following functions by $1^{\text {st }}$ principal. (4 Marks Each)

1. $\mathrm{y}=e^{\cos \sqrt{x}}$
2. $\mathrm{y}=\operatorname{cosec}^{3} x$
3. $\mathrm{y}=\operatorname{cosec}^{1 / 3} x$
4. $\mathrm{y}=\log \sec ^{2} x$
5. $\mathrm{y}=\log \cos ^{3} x$
6. $\mathrm{y}=\log \cos \sqrt{x}$
7. $\mathrm{y}=\log \sin ^{1 / 3} x$
8. $\mathrm{y}=\sin ^{2} x \tan ^{3} x$
9. $\mathrm{y}=\tan x \operatorname{cosec}^{2} x$
10. $\mathrm{y}=\tan ^{2} x \sec ^{3} x$
11. $\mathrm{y}=\frac{\cos ^{2} x}{x^{2}}$
12. The equation of the line passing through the point of intersection of the lines $x+2 y+3=0$ and $3 x+4 y+7=0$ and parallel to the line $y-x=6$ is :
(a) $x-y=0$
(b) $x+y=1$
(c) $x+2 y-3=0$
(d) $2 x+y-3=0$
13. The image of the point $P(3,8)$ in the line $x+3 y-7=0$ is :
(a) $(1,4)$
(b) $(-1,4)$
(c) $(1,-4)$
(d) $(-1,-4)$
14. If the parabola $y^{2}=4 a x$ passes through the point $P(3,2)$, then the length of its latus rectum is:
(a) $1 / 3$
(b) $2 / 3$
(c) $4 / 3$
(d) 4
15. If $\mathrm{A}(2,0)$ is the vertex and the $y$-axis is the directrix of a parabola, then its focus is
(a) $\mathrm{F}(2,0)$
(b) $\mathrm{F}(-2,0)$
(c) $\mathrm{F}(4,0)$
(d) F(-4,0)
