# MHT CET 2024 Question Paper 

## May 3 Shift 2

Ques 1. If $\mathbf{y}=\boldsymbol{\operatorname { s e c }}\left(\tan ^{-1} \mathbf{x}\right)$ then $d y / d x$ at $\mathbf{x}=1$
A. $1 / 2$
B. 1
C. $1 / \sqrt{ } 2$
D. $\sqrt{ } 2$

Ans. C

Ques 2. If $y=\log \left[e^{3 x}((x-4) /(x+3))^{3 / 2}\right]$ then find $d y / d x$

Ans. $3+21 /\{2(x-4)(x+3)\}$
Ques 3. Find the differential equation of the family of all circles, whose center lies on the $x$-axis and touches the $y$-axis at the origin.

Ans. $2 x y d y / d x=y^{2}-x^{2}$
Ques 4. If $f(x)=3 x+6, g(x)=4 x+k$ and $f o g(x)=\operatorname{gof}(x)$ then $k=$ ?
Ans. $\mathrm{k}=9$

