



MATHEMATICS CH-9- DIFFERENTIAL EQUATIONS

Name: _____

Date: _____

Class: XII Sec: ____

1. Find the particular solution of the differential equation $dy/dx = 1+x^2+y^2+x^2y^2$, given that $y=1$ when $x = 0$.

2. Solve the differential equation:

$$(1+x^2)dy/dx + y = \tan^{-1}x$$

3. Find the particular solution of the differential equation $ex^{\sqrt{1-y^2}} dx + y/x dy = 0$, given that $y=1$ when $x=0$.

4. Solve the differential equation: $(\tan^{-1}y - x) dy = (1+y^2) dx$

5. Solve the differential equation:

$$[e^{-2\sqrt{x}}/\sqrt{x} - y/\sqrt{x}]dx/dy = 1$$

6. Solve the differential equation:

$$x \log x \, dy/dx = 2 \log x$$

7. Find a particular solution for the differential equation given that $y=0$, when $x=1$

$$dy/dx - y/x + \operatorname{cosec}(y/x) = 0.$$

8. Solve the differential equation:

$$\cos 2x \, dy/dx + y = \tan x$$

9. Solve the differential equation $dy/dx + y \cot x = 2 \cos x$, given that $y = 0$ when $x = \pi/2$.

10. Show that the differential equation is homogeneous and solve it:

$$y dx + x \log(y/x) dy - 2x dy = 0.$$