

### ***Bernoulli Differential Equations***

2.72  $3xy' - 3xy^4 \ln x - y = 0$     **ANS**  $\frac{1}{y^3} = -\frac{3}{4}x(2 \ln x - 1) + \frac{C}{x}; y = 0$

2.73  $\frac{dy}{dx} = \frac{4x^3y^2}{x^4y + 2}$     **ANS**  $x^4 = -\frac{1}{y} + Cy; y = 0$

2.74  $y(6y^2 - x - 1) dx + 2x dy = 0$     **ANS**  $\frac{1}{y^2} = \frac{1}{x}(6 + Ce^{-x}); y = 0$

2.75  $(1 + x)(y' + y^2) - y = 0$     **ANS**  $\frac{1}{y} = \frac{1}{1+x}\left(\frac{x^2}{2} + x + C\right); y = 0$

2.76  $xyy' + y^2 - \sin x = 0$     **ANS**  $x^2y^2 = -2x \cos x + 2 \sin x + C$

2.77  $(2x^3 - y^4) dx + xy^3 dy = 0$     **ANS**  $y^4 = 8x^3 + Cx^4$

2.78  $y' - y \tan x + y^2 \cos x = 0$     **ANS**  $\frac{1}{y} = \cos x(x + C); y = 0$

2.79  $6y^2 dx - x(2x^3 + y) dy = 0$     **ANS**  $(y - 2x^3)^2 = Cyx^6; y = 0$