

## Meeting 2 Worksheet (6/28/22)

1. Explain why the following equations are separable, then solve the equation

(a)  $\frac{dy}{dx} = \frac{x - e^{-x}}{y + e^y}$

(b)  $y' + y^2 \sin x = 0$ .

2. Identify the type of equation and solve using an appropriate method.

(a)  $\frac{dy}{dx} + \frac{1}{2}y = 2 + x$

(b)  $\sin 2x dx + \cos 3y dy = 0$

(c)  $\frac{dr}{d\theta} = \frac{r^2}{\theta}$

(d)  $xy' + 2y = \frac{\sin x}{x}$