Quiz 2: No calculators. Justify all answers. No partial credit is given for an unexplained and incorrect answer.

Consider the differential equations (a) and (b) below.

$$(a) \quad y' = \frac{y + e^{t/3}}{2}$$

$$(b) \quad y' = \frac{t^2}{1 + y^2}$$

1. (2pts) Which of the above equations are separable?

2. (2pts) Which are linear?

3. (3pts) Find the explicit general solution to (a).

4. (3pts) Find an implicit general solution to (b).