1. Classify each of the following DEs as separable (S), linear (L), homogeneous (H), exact (E), or Bernoulli (B). [Do not solve the DE, and note that DEs may have more than one classification.]

    (i) $(3x^2 + 2y^2)dx + (4xy + 6y^2)dy = 0$

    (ii) $x\dfrac{dy}{dx} + 6y = 3x^2 y^{4/3}$

    (iii) $(x^2 - 1)y' + 2y = 0$

2. Solve the DE $y' = 2\tan^2(2x + y)$