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) $x\dfrac{dy}{dx} + 6y = 3x^2 y^{5/3}$

(ii) $(x^2 - 1)y' + 3y = 0$

(iii) $(3x^2 + 2y^2)dx + (4xy + 5y^2)dy = 0$

2. Solve the DE $y' = 3\tan^2(3x + y)$