1. Given the function \( f(x) = (x-2)(x-5) \), find the equations of two lines: one tangent to \( f(x) \) and the other perpendicular to \( f(x) \), both at \( x = 2 \). Draw graphs of all three on a single graph.

2. Evaluate the following derivatives:
   (a) \( \frac{d}{dx} \tan(2x^2 + 1) \)
   (b) \( \frac{d}{dt} t^2 e^{-t} \)
   (c) \( \frac{d}{dx} \sin^{-1}(5x) \)

3. Evaluate the following integrals:
   (a) \( \int \sqrt{1-x} \, dx \)
   (b) \( \int \frac{1}{\sqrt{4-x^2}} \, dx \)
   (c) \( \int \cos^2(3x) \, dx \)
   (d) \( \int 3xe^{-2x} \, dx \)

4. Plot the curves with the following parametrizations:
   (a) \( x = 3t + 1 \) and \( y = 1 - t \) for \( 0 \leq t \leq 3 \).
   (b) \( x = 2 \cos t \) and \( y = 3 \sin t \) for \( 0 \leq t \leq \pi \).

5. Plot the following polar graphs:
   (a) \( r = \cos \theta \)
   (b) \( r = 3 \)
   (c) \( r = 2 \sec \theta \). Hint: \( r \cos \theta = x \).