log means: the common logarithm, so with base 10.
ln is the natural logarithm, so with base \( e \approx 2.718 \) and \( \pi \approx 3.14 \).

1. Solve the next equations:
   a) \(-2\log_5 x + 5\log_{25} x = 2\)
   b) \(\sqrt{x-1} - x = -7\)

2. Solve the next inequalities:
   a) \(\frac{-x + 9}{x - 1} \geq x\)
   b) \(\log(3 - 2x) < 1\)

3. Let \( f(x) = \frac{\cos x}{2 + \sin x} \) with domain the closed interval: \(0 \leq x \leq 2\pi\).
   a) Find the equation of the tangent line at the graph of the function where \( x = \pi \)
   b) Find the stationary points of \( f \), so solve: \( f'(x) = 0 \).
   c) Make a sign chart (sign diagram) for \( f' \) on the domain and find all extreme values of \( f \).
      Say: local/global and maximum/minimum.
   d) Find the range of the function \( f \).

4. Let \( f(x) = \frac{2x^2 - 3x}{e^x} \).
   a) Find the equation of the tangent (line) at the graph of \( f \) in the point where \( x = 1 \).
   b) Find and classify the extreme values.
   c) Find the interval(s) on which the graph of the function is convex.

5. a) Find \( \int_{-2}^{1} \frac{x^2}{\sqrt{2-x}} \, dx \)
   b) Find \( \int_{0}^{2} \frac{1}{1 + e^x} \, dx \)

6. a) Solve the system of equations:
   \[ x^2 + y^2 = 25 \]
   \[ 3x - 4y = 0 \]
   b) Find the area of the surface in the \((x,y)\)-plane that satisfies both inequalities:
   \[ (x^2 + y^2 \leq 25) \land (3x - 4y \leq 0) \]

7. Find \( \int_{-1}^{-0.5} \frac{e^{1/t}}{t^2} \, dt \)

Points: 10, 10, 20, 20, 20, 10, 10.