NO CALCULATORS!
1. Evaluate the integral \( \int_{3}^{\infty} \frac{1}{(x-1)^2} \, dx \)

2. Sketch the graph of \( r = 4 + 2 \sin \theta \) in polar coordinates.

3. Sketch the graph of \( x^2 + 4x + y^2 - 8y = 0 \).

4. Convert to rectangular coordinates: \( r = 2 + \sin \theta \).
5. Find the equation of the locus of all points whose distances from (2, 0) and (-2, 0) add up to 10.

6. Find the area inside the curve \( r = 2 + 2 \sin \theta \) in the wedge between \( \theta = 0 \) and \( \theta = \frac{-\pi}{6} \).

7. Find the slope of the tangent line of the curve \( \begin{align*}
    y &= t^2 - t \\
    x &= e^t
\end{align*} \) at the point \((e, 0)\).

8. Find the limit of the sequence \( \frac{\cos n}{n^2} \).
9. Sum the series \(3 + \frac{3}{2} + \frac{3}{4} + \frac{3}{8} \ldots\)

10. Find the first 3 terms of the Taylor series for \(y = \sin x\) at \(\frac{\pi}{2}\).