1. (3pts) Evaluate the area of the region bounded by the curve \( y = x^2 - 2x \) and the line \( y = x \).

2. (3pts) Evaluate the area of the region enclosed by the two curves \( x = 2 - y^2 \) and \( x = 2y^4 - y^2 \).

3. (4pts) Find the volume of the solid generated by revolving the region enclosed by the triangle with vertices (1, 0), (2, 0) and (2, 1) about the y-axis.

\[
A = \int_{-1}^{1} \left[ (2-y^2) - (2y^4-y^2) \right] \, dy
\]
\[
= 2 \int_{-1}^{1} (1-y^4) \, dy
= 2 \left[ y - \frac{y^5}{5} \right]_{-1}^{1}
= \frac{16}{5}
\]

\[
V = \pi \int_{0}^{1} \left[ (2 - (y+1))^2 \right] \, dy
\]
\[
= \pi \int_{0}^{1} (8y^2 + 4y + 1) \, dy
= \pi \left[ \frac{8y^3}{3} + 2y^2 + y \right]_{0}^{1}
= \frac{5}{3}
\]