Worksheet

1. Find the area of the region between the curves $y = x^2 - 2$ and $y = -x$.

2. For each $b$ with $1 \leq b \leq 4$ construct the triangle perpendicular to the $x$-$y$ plane and with one edge the segment perpendicular to the $y$-axis at the point $(0, b)$ and with its endpoints on the curve $y = x^2 - 2$. Find the volume enclosed by these triangles and the planes $y = 1$ and $y = 4$. 