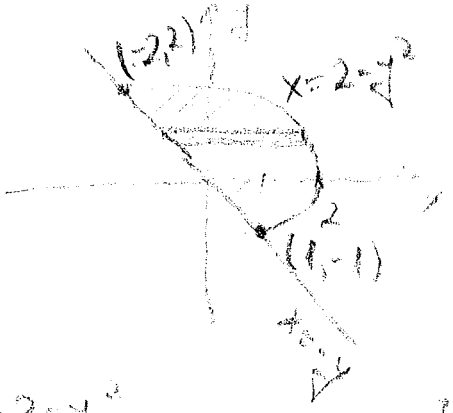
**Quiz 3** **Name:** _____

**To receive credit you MUST SHOW ALL YOUR WORK.**

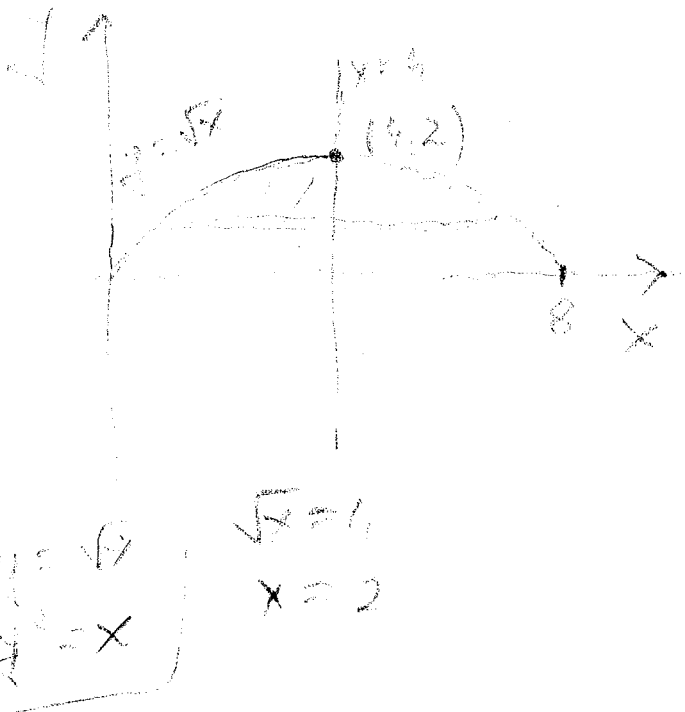
**1.** Set up an integral (or integrals) that represent each of the following. You are **NOT** required to evaluate the integrals. A sketch the region or solid is required, along with the integral (or integrals).

(a) (5 pts) The area of region between the curves $x = 2 - y^2$, $x + y = 0$.



$$\int_{-1}^{2} (2 - y^2) - (-y)\, dy = \int_{-1}^{2} 2 - y^2 + y\, dy$$

(b) (5 pts) The volume of the solid obtained when the region bounded by $y = \sqrt{x}$, the $x$-axis and the line $x = 4$ is revolved around the line $x = 4$. Specify clearly what method you are using.
You will receive **2 bonus** points if you correctly solve the problem with both methods.



$$\int_0^2 \pi \underbrace{(4 - y^2)^2}_{r}\, dy$$

shell method

$$\int_0^4 2\pi \underbrace{(4 - x)}_{r} \underbrace{\sqrt{x}}_{h}\, dx$$