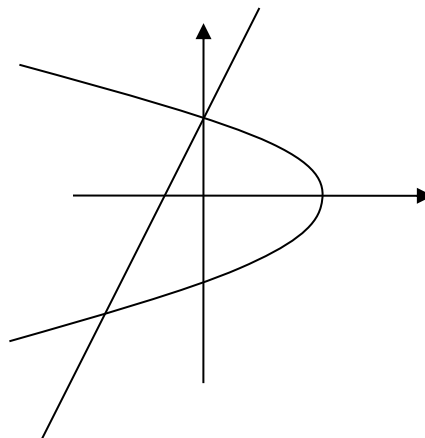
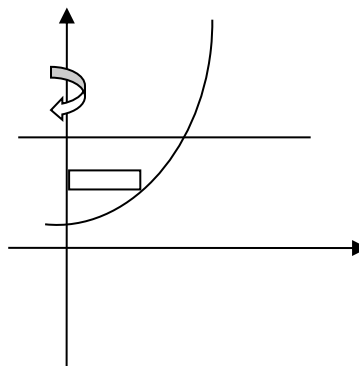


- *no calculators
- *show all relevant work to receive full credit
- *any evidence of academic dishonesty = 0 grade
- *only pencils, pens = -5 from grade
- *late for exam = -5 from grade

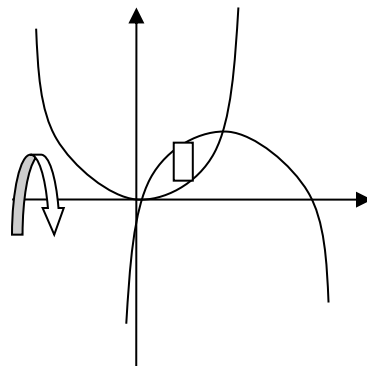
1. **SET UP** the definite integral to find the area of the region bounded by the graphs of $x = 1 - y^2$ and $x = y - 1$.



2. **SET UP** the integral to find the volume of the solid generated by rotating the region bounded by the graphs of $y = e^x$, $x = 0$, $y = 2$ about the y-axis using horizontal rectangles.



3. **SET UP** the integral to find the volume of the solid generated by rotating the region bounded by the graphs of $y = 2x - x^2$ and $y = x^2$ about the x -axis using vertical rectangles.



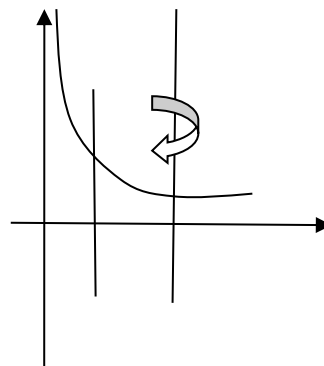
4. **SET UP** the integral to find the volume of the solid generated by rotating the region bounded by the graphs of $y = \frac{1}{x^2}$, $x = 1$, $x = 2$, and $y = 0$ about $x = 2$.

Indicate your choice of method by circling one of the following:

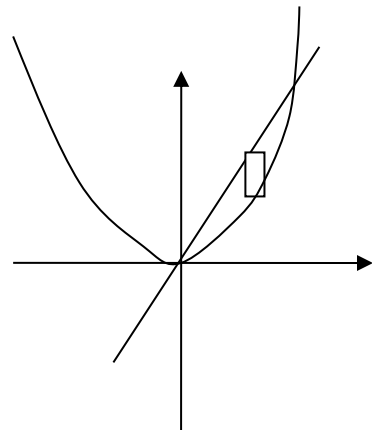
DISK

WASHER

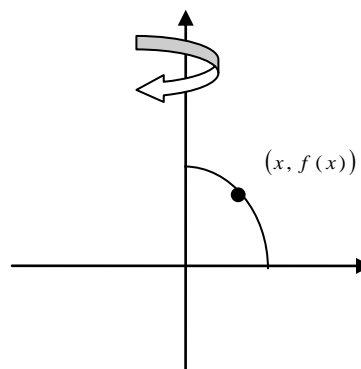
SHELL.



5. **SET UP** the integral to find the volume of the solid with square cross-sections taken perpendicular to the x -axis whose base is bounded by the graphs of $y = x^2$ and $y = 2x$.



6. **SET UP** the integral to find the area of the *surface* formed by rotating the graph of the curve $y = 1 - x^2$ over $[0, 1]$ about the y -axis.



7. Find the indefinite integral: $\int x \sin 2x \, dx$

8. Find the indefinite integral: $\int \ln x \, dx$

9. Find the indefinite integral: $\int \sin^5 x \cos^3 x \, dx$

10. **FIND** (don't just set it up) the volume of the solid, if the region bounded by the graphs of $y = e^x$, $x = 0$, $y = 0$, and $x = 1$ is rotated about the y-axis.

