## Information

- Practice Test 4 counts as an online quiz
- The Practice Final Exam counts as TWO online quizzes.
- Anyone making $95 \%$ or above on the Final Exam will receive an A in
this class.
- Anyone making at least $70 \%$ on the Final Exam will pass this class.
- Test 4, the Final Exam, Quiz 14, Practice Test 4 and the Practice Final Exam constitute over $1 / 2$ of your grade in this class. Everyone can still make a good grade

Today: Several Popper Questions will be given that can be used to replace an EMCF and an Online Quiz.

## Popper P36

1. Give the area bounded between the graphs of $y=x$ and $y=x^{2}$.
2. Give the area bounded between the graphs of $y=4 x$ and $y=x^{3}$.

## Popper P36

3. Give the average value of the function $f(x)=x^{2}-4 x$ on the interval $[-1,3]$.

## Popper P36

5. Give the volume generated when the region bounded between $y=x$ and $y=x^{2}$ is rotated around the $x$-axis.

## Popper P36

4. Give the volume generated when the region bounded between $y=x$ and $y=x^{2}$ is rotated around the $y$-axis.

## Popper P36

6. Give the upper Riemann sum associated with the function $f(x)=1-|x|$ on the interval $[-1,1]$ with respect to the partition $P=\{-1,-1 / 2,-1 / 4,1 / 4,1 / 2,1\}$.

## Popper P36

7. Give the lower Riemann sum associated with the function $f(x)=1-|x|$ on the interval $[-1,1]$ with respect to the partition $P=\{-1,-1 / 2,-1 / 4,1 / 4,1 / 2,1\}$.

## Popper P36

9. The graph of $f$ is shown below. $\int_{-4}^{-1} f(x) d x=9.5, \int_{-4}^{2} f(x) d x=13, \int_{-1}^{3} f(x) d x=2.75$. Give the area bounded between the $x$-axis and the graph of $f$.


Popper P36
8. $\quad f(x)=\frac{d}{d x} \int_{-2 x}^{3 x} \cos \left(t^{2}+1\right) d t . f^{\prime}(1)=$

## Popper P36

10. The graph of the derivative of $f$ is shown below. Give the largest value of $x$ where $f$ has a local maximum.

