Please read the instructions carefully. In order to receive credit you must show every step that leads you to a solution. If you do not understand directions, raise your hand and ask. Good luck to all of you!
a) Find the average value of $f(x) = \sqrt{x}$ on $[1, 4]$.

b) Find a number $c$ in $[1, 4]$ such that $f(c)$ equals the average value you found in a).
Find \[ \int x e^{2x} \, dx \]

HINT: Try integration by parts.
Use the method of partial fractions (Appendix F) to find
\[ \int \frac{1}{x^2 - x - 2} \, dx. \]
Find the volume of the solid obtained by rotating the region bounded by $y = x$ and $y = x^2$ about the $x$-axis.