

Name: _____

Key to Practice Test 1 for Test 3 MTH 151I-L

1. $9 + \frac{1}{6}$.
2. See 4.2. I omit the solution. Ask me.
3. decreasing on $(-\infty, -4]$ and $[4, \infty)$; increasing on $[-4, 4]$. There is a local minimum at $x = -4$ and a local maximum at $x = 4$.
4. CD on $[-1/\sqrt{2}, 1/\sqrt{2}]$; CU on $(-\infty, -1/\sqrt{2}]$ and on $[1/\sqrt{2}, \infty)$. Points of inflection occur at $(-1/\sqrt{2}, f(-1/\sqrt{2}))$ and $(1/\sqrt{2}, f(1/\sqrt{2}))$.
5. $243/4$.
6. $\sqrt{600} + 10$ inches wide by $\frac{480}{\sqrt{600}} + 8$ inches tall.
7. $-1/3$.
8. $e^{-1/2}$.
9. $f(x) = 4x^{3/2} - 5x + 8$
10. The rock hits the ground after $\sqrt{20}$ seconds. The rock is travelling at $-10\sqrt{20}$ meters per second at the instant it strikes the ground.