Quiz 2

MATH 139-01 and -02
Tuesday, September 9, 2003

1. Find an equation of the line through the points $(-2, 5)$ and $(4, 2)$.

   Solution: The slope is
   $$\frac{5-2}{-2-4} = \frac{3}{-6} = -\frac{1}{2}.$$
   Using the point-slope formula, we get $y - 5 = -\frac{1}{2}(x+2)$, or $y = -\frac{1}{2}x + 4$.

2. What is the average rate of change of the function $f(x) = \frac{1}{2}x^2 + x$ as x goes from -2 to 4?

   Solution: The average rate of change is the slope of the secant line. This slope is
   $$\frac{f(4) - f(-2)}{4 - (-2)} = \frac{12 - 0}{6} = 2.$$