The 3 problems were worth 30, 30 and 40 points, resp. I graded 3a and 3b together for 20 points, same for 3c and 3d.

The average was approx 40 out of 100 with a high score of 86. I have not thought much about a scale for this quiz but a 40 might be a D or low C. Review any problems you missed, perhaps with help from our LA. Also, study any listed review topics that you have not yet mastered. I probably should have listed parametric equations, so please review that too.

1a) $\tan(x)+C$. This is just a memory question. You should explain briefly with a comment like "from memory" or "because $\frac{d}{dx}\tan x = \sec^2 x$" though I didn't require that this time.

1b) $x/2 - \sin(2x)/4 + C$. Start with the identity $\sin^2 x = (1 - \cos(2x))/2$ as in a similar problem from the first day of class. If you don't know this identity, but do know the one from class, you could start with $\sin^2 x = 1 - \cos^2 x$ instead.

Notice that the methods for 1a and 1b are quite different. Integrals may require a little trial and error to find the right method.

2) TFFTF. You are always welcome to ask me for explanations of TF.

3a) The min is $f(3/2) = -9/4$ and the max is $f(0) = 0$.

3b) We know there is an abs min and an abs max (two answers, and not ∞). This is the Extreme Value Thm (EVT). We know these values only occur when x is an endpoint (0 or 2) or a critical point (3/2, which comes from setting $f'(x) = 0$). So we compute all three and ignore the middle one (f(2)=-2 is in between the answers in 3a) so that is not part of the answer).

3c) The range is the interval $[-9/4, 0]$.

3d) The range includes all possible values of $f(x)$ such as $f(3/2) = -9/4$ and $f(0) = 0$, and every number in between (this last comment is based on the Intermediate-Value Theorem). It doesn't include any numbers bigger than 0 since, according to 3a, that is the maximum value.

Some people thought they could just plug in the endpoints of the domain, $x = 0$ and $x = 2$, to find the range. This works in simple examples where the function is monotone, but not in general. Some people wrote $[0, -9/4]$ but the order is wrong because $-9/4 < 0$. Some people drew a graph, which is probably a good idea for planning / checking, but it is not required.