AP Calculus **Name**_____

Quiz 4.4,4.5 RETAKE

Find the indefinite integral

1. $\int e^{\tan 2x} \sec^2 2x\,dx$.

Evaluate the definite integral.

2. $\int_0^3 \sqrt{x+1}\,dx$

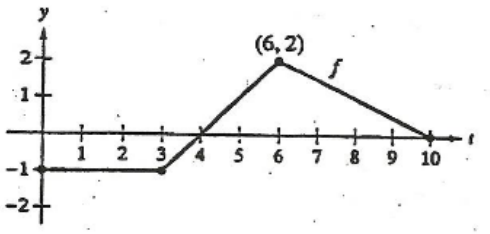
3. Find the average value of $g(x) = \sin 2x$ on $\left[0, \frac{\pi}{3}\right]$.

4. Given $F(x) = \int_1^{2x^3} \sqrt{t^2+5}\,dt$, find $F'(x)$ and $F'(1)$

5. Evaluate the indefinite integral. $\int \frac{\cos x}{\sin^4 x} dx$

6. Rewrite the definite integral $\int_1^3 x(1+2x^2)^4\,dx$ in terms of u. Let u = 1 + 2x^2. Do not evaluate.

Let $g(x)=\int_6^x f(t)\,dt$.



7. Find $g(4)$, $g'(4)$, and $g''(4)$ or state the value does not exist.

8. Find all values of x where *g(x)* attains a relative minimum. Justify your answer.

9. Find all values of x where *g(x)* has point(s) of inflection. Justify your answer.