

Name: \_\_\_\_\_

**NO CALCULATORS** Each problem is 3 points

1. Find the general anti-derivative of  $\frac{2}{1+x^2}$ .
2. Find the general anti-derivative of  $5 \cos x$ .
3. Find the derivative of  $\sec^3 x$ .
4. Find the general anti-derivative of  $\sec^2 x$ .
5. Find the derivative of  $xe^{x^2}$ .
6. Find the general anti-derivative of  $\pi$ .
7. Find the general anti-derivative of  $x^2 + \frac{1}{x}$ .
8. Find the derivative of  $\tan x^3$ .