

Name: _____

Section: _____

Clear your desk of everything except pens, pencils and erasers. **Show all your work.**If you have a question raise your hand and I will come to you.

1. Evaluate
- $\int \sec x dx$
- (total 3 points).

Answer: $\ln |\sec x + \tan x| + C$

(2 points for $\int \frac{1}{\sec x + \tan x} d(\sec x + \tan x)$; 1 points for the correct final result)

2. Evaluate
- $\int_{-\infty}^{\infty} \frac{1}{1+x^2} dx$
- (total 3 points).

Answer: π

(2 points for $\lim_{a \rightarrow -\infty} [\tan^{-1} x]_a^0 + \lim_{b \rightarrow \infty} [\tan^{-1} x]_0^b$; 1 point for the correct final result)

3. Evaluate
- $\int \frac{x^3 - 4x - 1}{x(x-1)^3} dx$
- (total 4 points).

Answer: $\ln |x| - \frac{3}{x-1} + \frac{2}{(x-1)^2} + C$

(3 points for $\int \left(\frac{1}{x} + \frac{3}{(x-1)^2} - \frac{4}{(x-1)^3} \right) dx$; and 1 point for the correct final step.)