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 $\int \sin^{-1} x \, dx$ (total 3 points).

    Answer: $x \sin^{-1} x + \sqrt{1 - x^2} + C$

    (2 points for $x \sin^{-1} x + \frac{1}{2} \int u^{-1/2} du$; and 1 point for the correct final step.)

2. Evaluate $\int \sin^2 x \cos^3 x \, dx$ (total 3 points).

    Answer: $\frac{1}{3} \sin^3 x - \frac{1}{5} \sin^5 x + C$

    (2 points for $\int \sin^2 x (1 - \sin^2 x) d \sin x$; 1 point for the correct final result)

3. Evaluate $\int \frac{\sqrt{x^2 - 4}}{x} dx$ (total 4 points).

    Answer: $2 \left(\sqrt{x^2/4 - 1} - \sec^{-1} \frac{x}{2} \right) + C$

    (2 points for $2 \int \tan^2 \theta d\theta$; 2 points for the correct final result)