1. Compute

$$\int_{-9}^{9} \frac{\cos(x^2)}{17x^3} \, dx.$$

Answer: 0

Solution: Odd function over a symmetric interval.

2.

$$\int_{0}^{\infty} \frac{1}{x^2} dx$$

Answer: 1

Solution: This is a simple integral. Use the power rule. Trivial.

3.

$$\int_{1}^{2} \tan^{-1} x + \cot^{-1} x \, dx$$

Answer: $\frac{\pi}{2}$

Solution: This is a constant function. Trivial.