

Name _____

- You have 20 minutes
- No calculators
- Show sufficient work

1. (2 points) Evaluate and simplify the following quantity.

$$4 \cos^2(\pi/5) + 4 \sin^2(\pi/5) - 3 \sec^2(\pi/5) - 6 \csc^2(\pi/5) + 3 \tan^2(\pi/5) + 6 \cot^2(\pi/5)$$

2. (2 points) Given an acute angle θ for which $\sin(\theta) = 2/5$, evaluate $\sin\left(\frac{3\pi}{2} - \theta\right)$.

3. (3 points) State the domain of the function using interval notation.

$$f(x) = \frac{8 \sin(x^2 - 25)}{4 - \sqrt{2x - 6}}$$

4. (3 points) Use the definitions of even and odd functions to prove whether the following function is even, odd or neither.

$$f(x) = \frac{x^4 \sin(x^3)}{x^5 - x^9}$$