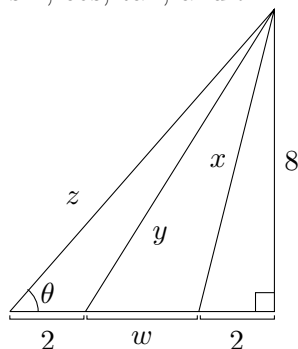


1. [9 points] Use the following diagram to answer the questions for this problem. Give your answers in **exact** form in terms of sin, cos, tan, and θ . Do not assume θ is a specific value.



- a. [2 points] Find the length of x .

$$x = \frac{\sqrt{2^2 + 8^2} = \sqrt{68}}{\quad}$$

- b. [2 points] Find the length of z .

$$z = \frac{8}{\sin(\theta)}$$

- c. [3 points] Find the length of w .

$$w = \frac{8}{\tan(\theta)} - 4$$

- d. [2 points] Find the length of y in terms of w .

$$y = \frac{\sqrt{(w+2)^2 + 8^2}}{\quad}$$

2. [6 points] Determine whether the following functions are even, odd, or neither even nor odd. Circle your answer. You do not need to show any work for this problem.

- a. [2 points] The function $x^2 + x + 1$ is

EVEN ODD NEITHER

- b. [2 points] The function $\frac{x^4 + 1}{x^3 - x}$ is

EVEN ODD NEITHER

- c. [2 points] The function $3x \sin(x)$ is

EVEN ODD NEITHER