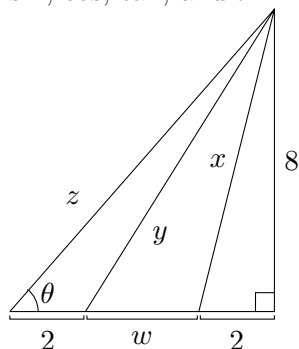


1. [9 points] Use the following diagram to answer the questions for this problem. Give your answers in **exact** form in terms of  $\sin$ ,  $\cos$ ,  $\tan$ , and  $\theta$ . Do not assume  $\theta$  is a specific value.



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

$x =$  \_\_\_\_\_

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

$z =$  \_\_\_\_\_

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

$w =$  \_\_\_\_\_

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

$y =$  \_\_\_\_\_

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