G4-M7-Lesson 7

1 ft = 12 in
1 yd = 3 ft

1. Determine the following sums and differences. Show your work.

a. 3 yd 1 ft + 4 ft = __4__ yd __2__ ft

3 yd 1 ft + 4 ft = 3 yd 5 ft = 4 yd 2 ft

1 yd 2 ft

I add like units and then rename 5 feet as 1 yard 2 feet. I add 1 yard to 3 yards.

b. 5 yd − 2 ft = __4__ yd __1__ ft

4 yd 3 ft

I rename 5 yards as 4 yards 3 feet in order to subtract 2 feet.

c. 3 ft 7 in − 8 in = __2__ ft __11__ in

2 ft 19 in

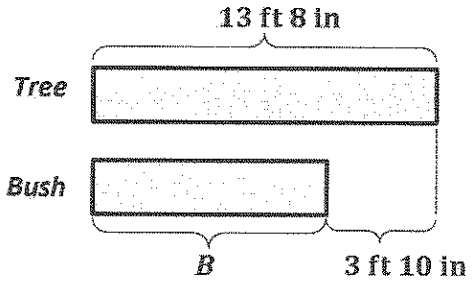
I try to subtract like units, but I can't take 8 inches from 7 inches. I rename 3 feet 7 inches as 2 feet 19 inches by taking 1 foot from 3 feet and renaming it as 12 inches and then adding the 7 inches. Then I can subtract 8 inches.

d. 3 ft 8 in + 4 ft 8 in = __8__ ft __4__ in

3 ft 8 in + 4 ft 8 in = 7 ft 16 in = 8 ft 4 in

1 ft 4 in

2. The height of the tree is 13 feet 8 inches. The height of the bush is 3 feet 10 inches shorter than the height of the tree. What is the height of the bush?



13 ft 8 in − 3 ft 10 in = 9 ft 10 in

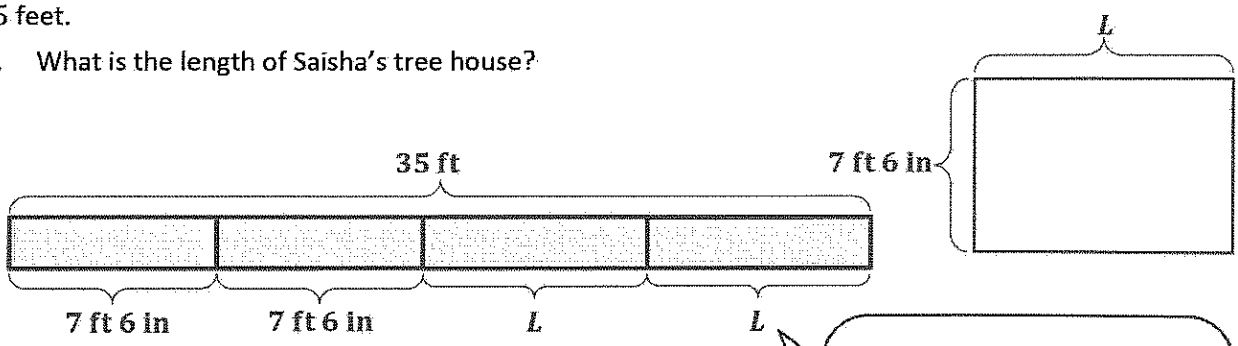
12 ft 20 in

B = 9 ft 10 in

The height of the bush is 9 feet 10 inches.

3. The width of Saisha's rectangular-shaped tree house is 7 feet 6 inches. The perimeter of the tree house is 35 feet.

   a. What is the length of Saisha's tree house?



$$7 \text{ ft } 6 \text{ in} + 7 \text{ ft } 6 \text{ in} + L + L = 35 \text{ ft}$$
$$14 \text{ ft } 12 \text{ in} + L + L = 35 \text{ ft}$$
$$15 \text{ ft} + L + L = 35 \text{ ft}$$
$$L + L = 20 \text{ ft}$$
$$L = 10 \text{ ft}$$

The length of Saisha's tree house is 10 feet.

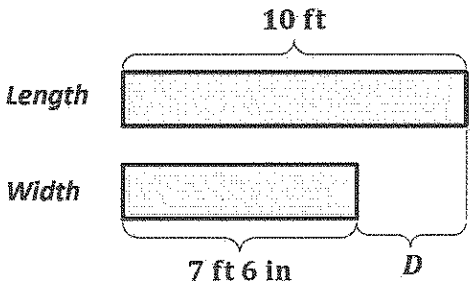
The tape diagram helps me to solve this problem. I see that if I subtract the widths from the perimeter that the difference is two times as much as the length.

I know the perimeter is 35 feet. I subtract the two widths from the perimeter to get the sum of the two lengths.

$35 \text{ ft} - 15 \text{ ft} = 20 \text{ ft}$

$10 \text{ ft} + 10 \text{ ft} = 20 \text{ ft}$

   b. How much longer is the length of Saisha's treehouse than the width?



$$D = 10 \text{ ft} - 7 \text{ ft } 6 \text{ in}$$
$$9 \text{ ft} \quad 12 \text{ in}$$
$$= 2 \text{ ft } 6 \text{ in}$$

The length of Saisha's treehouse is 2 feet 6 inches longer than the width.