

Name Jack Date _____

Solve the following problems. Use pictures, words, or diagrams to help you solve.

1. The projection screen in the school auditorium is 5 times as long and 5 times as wide as the screen in the library. The screen in the library is 4 feet long with a perimeter of 14 feet. What is the perimeter of the screen in the auditorium?

4 ft
3 ft
Library's Screen
 $P = 14 \text{ ft}$
 $14 - 4 - 4 = 6$
 $6 \div 2 = 3$
 $w = 3$

20 ft
4 4 4 4 4
3 3 3 3 3
Auditorium's Screen

$P = 2 \times (l + w)$
 $= 2 \times (20 + 15)$
 $= 2 \times 35$
 $= 70$
 $P = 70 \text{ ft}$
The perimeter of the screen in the auditorium is 70 ft.

2. The width of David's tent is 5 feet. The length is twice the width. David's rectangular air mattress measures 3 feet by 6 feet. If David puts the air mattress in the tent, how many square feet of floor space will be available for the rest of his things?

10 ft
5 ft 5 ft
6 ft
3 ft
5 ft

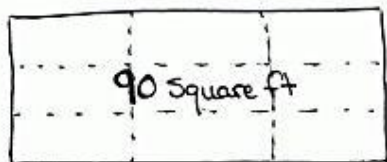
Tent
 $A = l \times w$
 $= 10 \times 5$
 $= 50$
 $A = 50 \text{ square ft.}$

Air mattress
 $A = l \times w$
 $= 6 \times 3$
 $= 18$
 $A = 18 \text{ square ft.}$

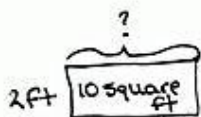
$$\begin{array}{r} 410 \\ 50 \\ -18 \\ \hline 32 \end{array}$$

32 square feet of floor space will be available.

3. Jackson's bedroom has an area of 90 square feet. The area of his bedroom is 9 times that of his closet. If the closet is 2 feet wide, what is its length?



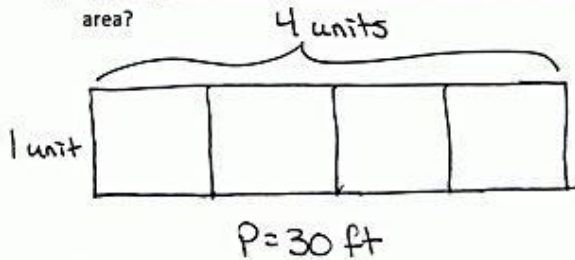
$$\begin{aligned} \text{Area of closet} \times 9 &= \text{Area of bedroom} \\ \text{Area of closet} \times 9 &= 90 \\ 90 \div 9 &= 10 \\ \text{Area of closet} &= 10 \text{ square ft} \end{aligned}$$



$$\begin{aligned} A &= l \times w \\ 10 &= l \times 2 \\ l &= 5 \end{aligned}$$

The length of the closet is 5 feet.

4. The length of a rectangular deck is 4 times its width. If the deck's perimeter is 30 feet, what is the deck's area?



$$\begin{aligned} P &= 2 \times (l + w) \\ &= 2 \times (4 + 1) \\ &= 2 \times 5 \\ &= 10 \text{ units} \end{aligned}$$

The deck's area is 36 square feet. $10 \text{ units} = 30 \text{ ft}$
 $1 \text{ unit} = 3 \text{ ft}$

$$\begin{aligned} w &= 3 \text{ ft} \\ l &= 12 \text{ ft} \\ A &= 12 \text{ ft} \times 3 \text{ ft} \\ &= 36 \text{ square feet} \end{aligned}$$

