

Solve in 15 minutes. Show

work.

Here are all the formulas and measurements you need to solve the problems.

$$J_{th} = \text{Walls} + \text{Triangle roof} + \text{Roof} + \text{Garden}$$

$$\text{Length } L = 10$$

$$\text{Width } W = 7$$

$$\text{Height } H = 4$$

$$\text{Base of triangle } B = W + 1$$

$$\text{Perimeter } P = 2(L + W) - 4$$

1. Solve for the following:

$$\text{Walls} = P(H) \quad = \underline{\hspace{2cm}}$$

$$\text{Triangle roof} = 2((B \times H)/2) \quad = \underline{\hspace{2cm}}$$

$$\text{Roof} = (W + 2)L \quad = \underline{\hspace{2cm}}$$

$$\text{Garden} = 2(2L + (W - 2)) \quad = \underline{\hspace{2cm}}$$

$$\text{Total} =$$

2. Draw just the perimeter of the house and show the measurements.

Why is the perimeter $2(L+W)-4$?

3. Draw just the walls and show the measurements.

Why are the walls **P(H)**?

4. Draw just the triangle roof and show the measurements.

Why is the triangle roof **$2(Bh/2)$** ? Please say how to find the area of a triangle, what is the cross cancel shortcut, and why it is different in Minecraft than in the real world.

Clue: $\text{Base} = \text{Width} + 1$

5. Draw just the roof and show the measurements.

Why is roof $(W+2)L$?

6. Draw just the garden and show the measurements.

Why is garden $2(2L+(W-2))$?

What is $(W-2)$? _____

What is $2L$? _____

Why do we add $2L$ and $W-2$ together? _____

Why do we multiply $(2L-(W-2))$ by 2?

7. Draw the Jamestown house and show the measurements.

Why is $J_{th} = Walls + Tr + R + G$?

Extension Activity:

Make a movie of how to build the Jamestown House.

Basic rules:

- Choose a length, width, and height and use the formulas on the first page to calculate how many blocks you will need
- The video should be less than 10 minutes — the shorter the better. Write a script or an outline so you'll have talking points.