A wallpaper of 312cm long and 25cm wide is used to cover the walls of a room of length 7m. If the breadth is twice it's height, then find it's height.

Solution:

Let the height of the room be h, then its breadth is 2h.

Area of the walls of the room is

$A = 2lh + 2bh$

$l = 7\,m,\, b = 2h$

$A_1 = (14h + 4h^2)\,m^2$

Area of the wallpaper is

$A_2 = 3.12 * 0.25 = 0.78\,m^2$

$A_1 = A_2$

$14h + 4h^2 = 0.78$

$2h^2 + 7h - 0.39 = 0$

$h = 0.055\,m$

It is not possible, so input data were not correct.
If we will take wallpaper being 3120 inch long and 25 inch wide, then

$A_2 = 3120 * 25 = 78000\,inch^2 = 50.32\,m^2$

$4h^2 + 14h - 50.32 = 0$

$h = 2.2\,m$

Answer: The height of a room is 2.2 m.