Challenge #18

If the pitch of Bertrand Russell's roof is 5/12 and his house measures 24 m across the front and 40 m from front to back, how many square meters of roof will he have (assuming no overhang)?
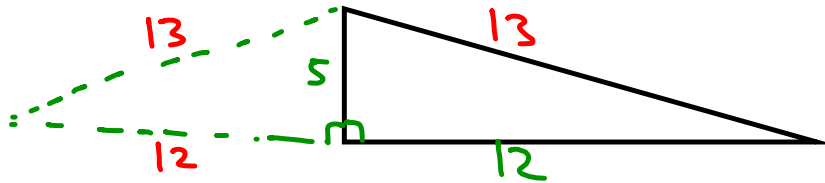
Challenge #18 Solution

pitch = 5/12
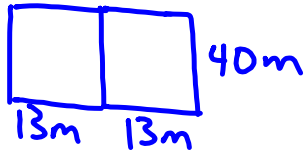
House: 24 m across and 40 m deep.

use Pythagorean
Thm:
$$5^2 + 12^2 = d^2$$

$$d = 13$$

13   13
   5
12   12

roof:

40m

13m   13m

$$A = 13(40)(2) = \boxed{1040 \text{ m}^2}$$