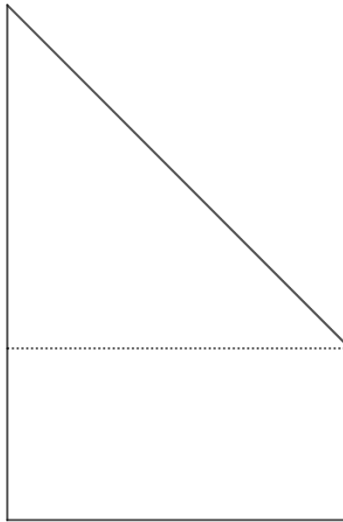


Name:

Group 1

Result:

1. A window has a shape of a isosceles right triangle on top of a rectangle as shown on the diagram below: *(5 points)*



The perimeter is equal to 6 metres. Find the **height** of the window if its area is to be maximized.

2. The equation

(6 points)

$$2x^2 - x - 5 = 0$$

has two solutions: α and β .

Find quadratic equations with integer coefficients with solutions:

a) $\alpha - 3$ and $\beta - 3$,

b) α^2 and β^2 .

3. For what values of parameter m the equation:

(5 points)

$$x^2 + mx + m + \frac{5}{4} = 0$$

has two real, **negative** solutions?