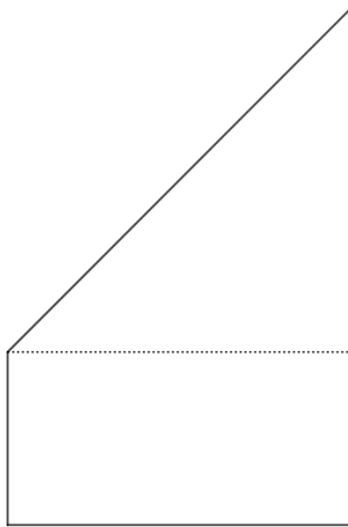Name:
Group 2
Result:

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 8 metres. Find the **height** of the window if its area is to be maximized.

2. The equation   *(6 points)*

$$2x^2 + x - 3 = 0$$

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, **positive** solutions?