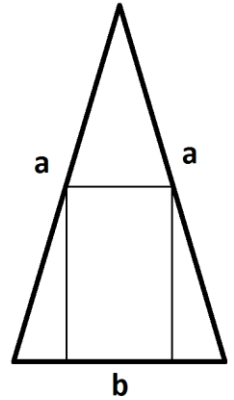


MATH 104- QUIZ 5

Name:

Student number:

1. Find the largest rectangle that can be inscribed in an isosceles triangle of sides a and base b .



Write the final answer with a RED PEN here

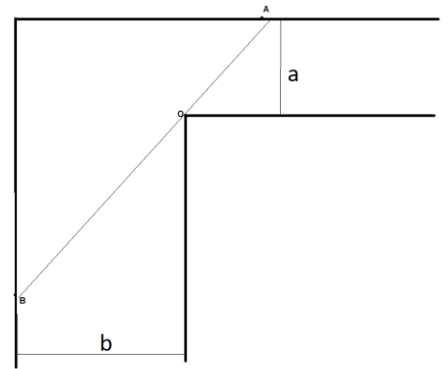
Area =

2. Find The largest cylinder that can be inscribed in a sphere of radius R .

Write the final answer with a RED PEN here

Volume =

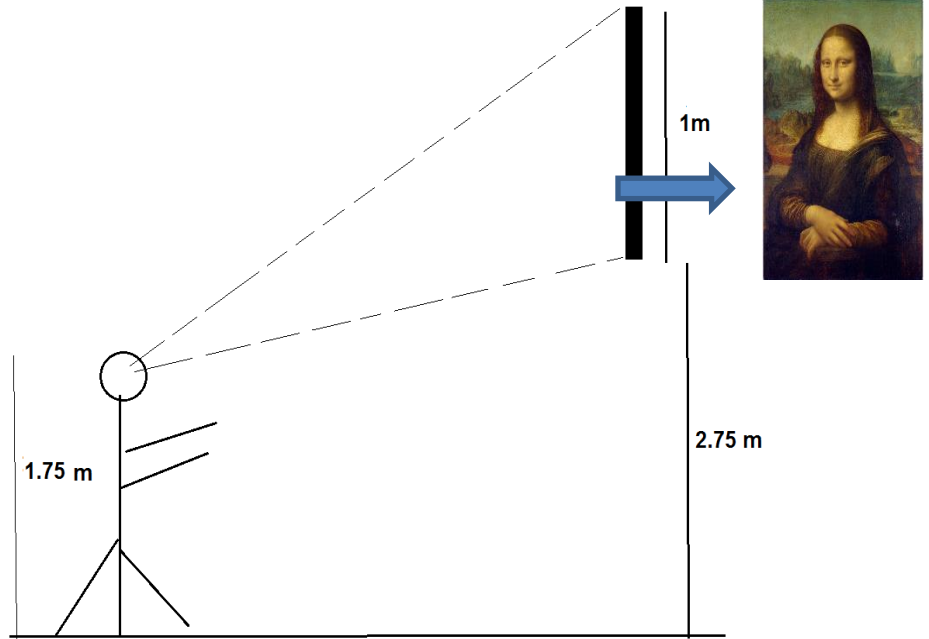
3. Find the longest straight bar that can be carried in the corridor shown below. (Hint: Find the minimum distance of AOB)



Write the final answer with a RED PEN here

Length =

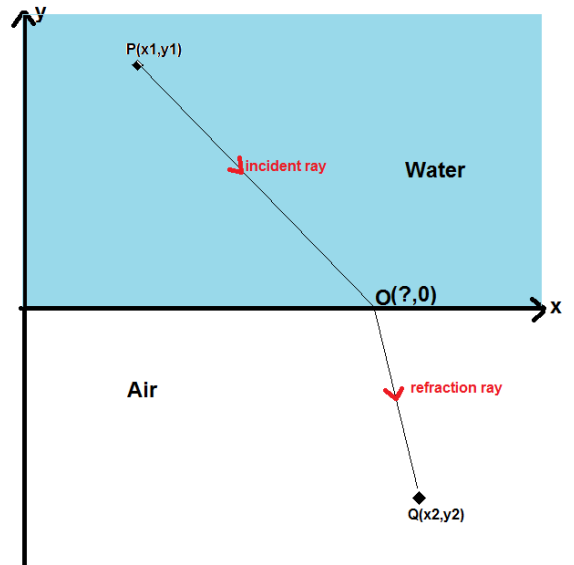
4. The portrait of Mona Lisa is hanged on the wall in Lover museum in Paris. The bottom of the portrait is 2.75 m above the ground and the portrait itself is 1 m. Assuming that I am 175 cm tall, at what distance from the wall should I stand in order to see the picture most clearly? (Only derive the model, you don't need to differentiate)



Write the final answer with a RED PEN here

Model Derived:

5. Point P is in water and Point Q is in air. The speed of light in water is v_w and in air is v_a . Determine point O on the interface of the two media. (Look for the path that the ray of light can travel in shortest time). Only derive the model. You don't need to differentiate.



Write the final answer with a RED PEN here

Model Derived