# GEOMETRY TEST - 3° ESO

**Exercise 1: (0.5 points)** Enunciate Pythagoras' theorem

Exercise 2: (1 pto) Edward wants to redesign the Smurf hat pattern and transform it into an isosceles triangle with base of length 3 cm and equal sides of length 5 cm. How much fabric would they need to produce a hat? Do you think Edward's design will succeed?

Exercise 3: (1.25 points) Find the axial diagonal of a cuboid if two of the sides have lengths 15 cm and 5 cm and the length of the diagonal of one of the faces measures 17 cm:

17 cm

5 cm

15 cm
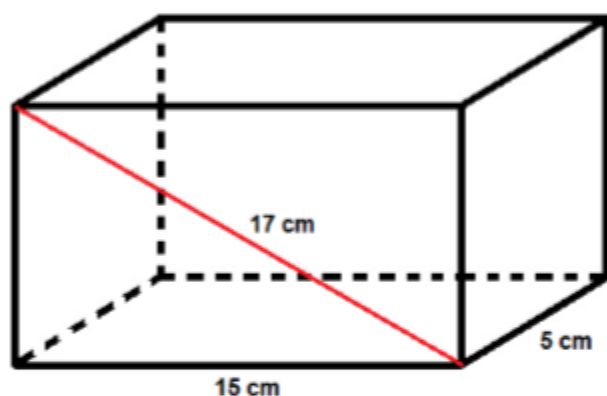
Exercise 4: (1 point) The Greek mathematician Thales applied the intercept theorem to determine the height of the Cheops' pyramid using a pole. At the same time of the day he measured the length of the pyramid's shadow from its center and the length of the pole's shadow. Knowing that the height of the pole was 1.63m, its shadow measures 2 m and the shadow of the pyramid has a length of 180 m, could you tell me the height of the pyramid?
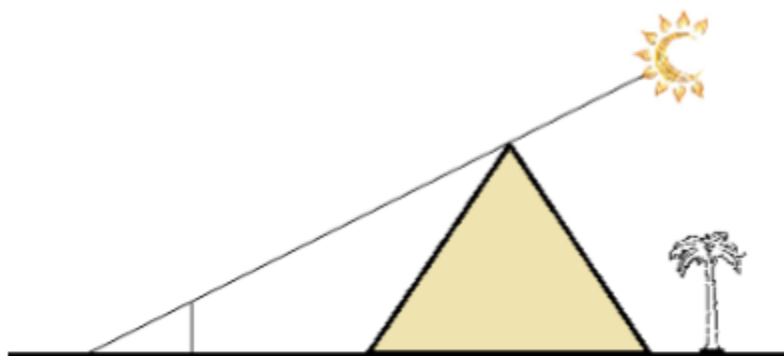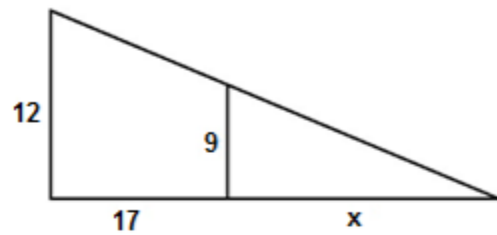
Exercise 5: **(2 points)** Work out the values of the indeterminates in the following figures:

a)

15
17
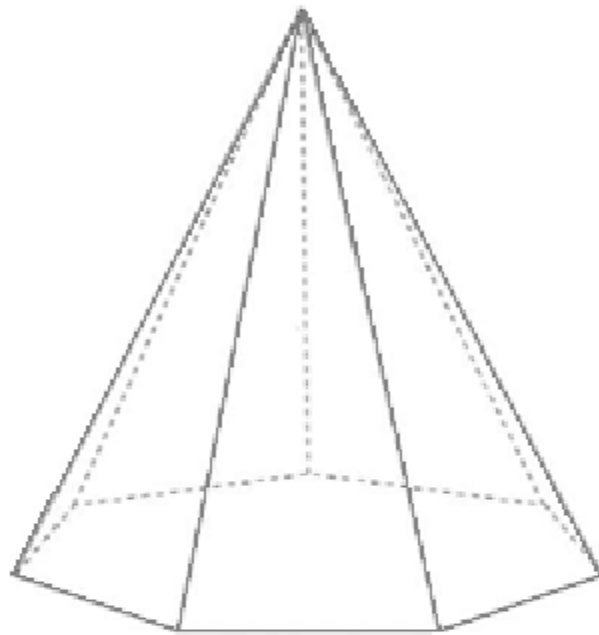12
y
7
x

b)

12
9
17
x
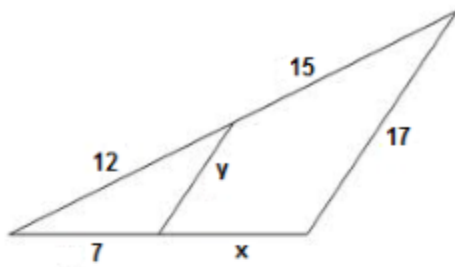
Exercise 6: **(2 points)** Work out the value of the area of a heptagonal pyramid with height 24 cm if the length of the side of the base is 10 cm and the edge of the faces measures 25 cm.

Exercise 7: **(1.25 points)** Work out the area of a regular hexagon if the length of the apothem is 12 cm

Exercise 8: **(1 point)** Work out the value of the shadowed area:

10 cm