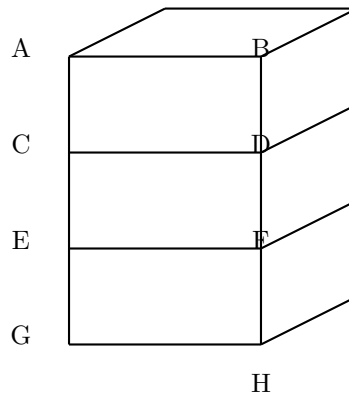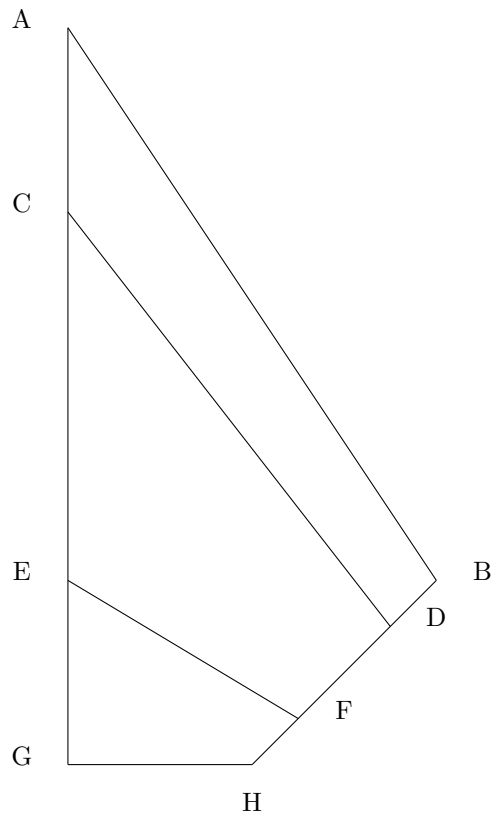# Question 1

Three rectangular bricks of identical size are put one on top of the other, as illustrated in the following figure:

A picture is taken with the camera positioned along the line A-G. The camera constant is $f = 0.5$.

You are given the location in the picture of the points A,B, C, G, H.

$$A = (0,0), \quad B = (2,3), \quad C = (0,1), \quad G = (0,4), \quad H = (1,4).$$

Compute the exact location of the camera in the picture. (Notice that it is known to be along the line A-G.)

Answer:

The camera location in the picture is $u = 0$, $v = $ _____ .

2.

Compute the direction of the line A-G in the 3D camera coordinates.
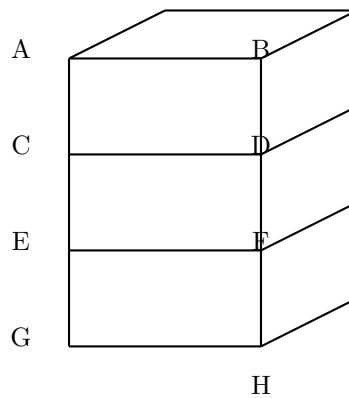
Answer:

The direction of the line A-G is:

3.

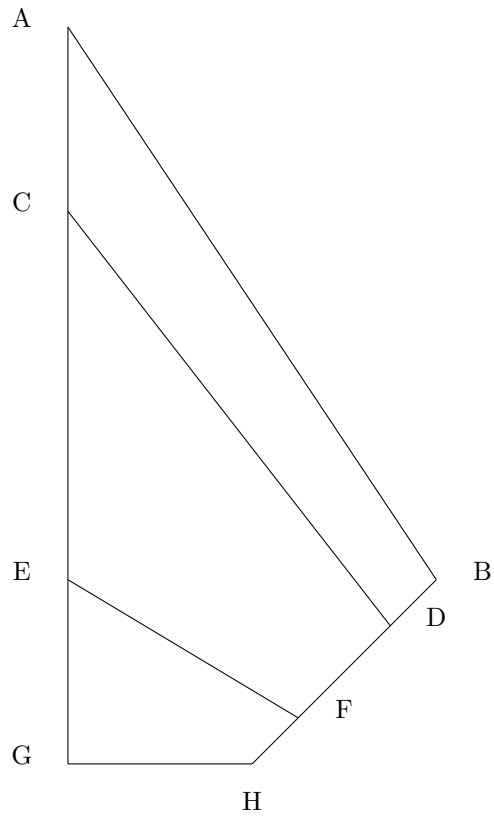Compute the exact location of the point E in the picture.

Answer:

The location in the picture of the point E is $u = 0$, $v = $ _____ .

Question 2

Three rectangular bricks of identical size are put one on top of the other, as illustrated in the following figure:

A picture is taken with the camera positioned along the line A-G. The camera constant is $f = 0.5$.

You are given the location in the picture of the points A,B, C, G, H.
$$A = (0,0), \quad B = (2,3), \quad C = (0,1), \quad G = (0,4), \quad H = (1,4).$$

Compute the exact location of the camera in the picture. (Notice that it is known to be along the line A-G.)

Answer:

The camera location in the picture is $u = 0$, $v = $ _____.

2.

Compute the direction of the line A-G in the 3D camera coordinates.

Answer:

The direction of the line A-G is:

3.

Compute the exact location of the point E in the picture.

Answer:

The location in the picture of the point E is $u = 0$, $v = $ _____.