1. A cat is stuck on the top of a building, D, which is on a horizontal street. Her worried owner, Kara, is standing on the street at a point O at an angle of depression of 60°. The base of the building is at G. The height of the building is 50 ft. The following diagram indicates the positions of D, O, and G.

(a) Label, in the diagram, the values of

i. The height of the building (1 mark)

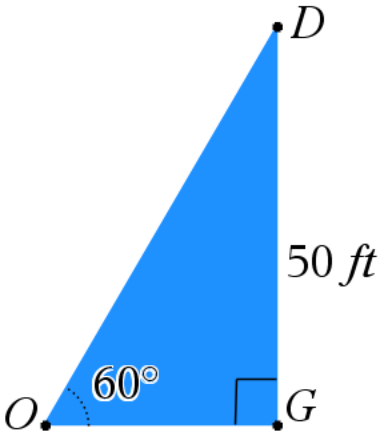
ii. The angle of depression (1 mark)

(b) Find the distance Kara is from the base of the building (2 marks)

(c) Kara estimates that the distance from the base of the building to where she is standing is 40 ft. Calculate the percentage error of Kara's estimate. (2 marks)

Mark scheme:

(a)



(A1)

(A1)

(b) $\tan 60° = \frac{50}{x}$ (M1)

$x = 28.9$ ft (A1)

(c) $\left|\frac{40-28.9}{28.9}\right| * 100$ (M1)

$= 38.4\%$ (A1)