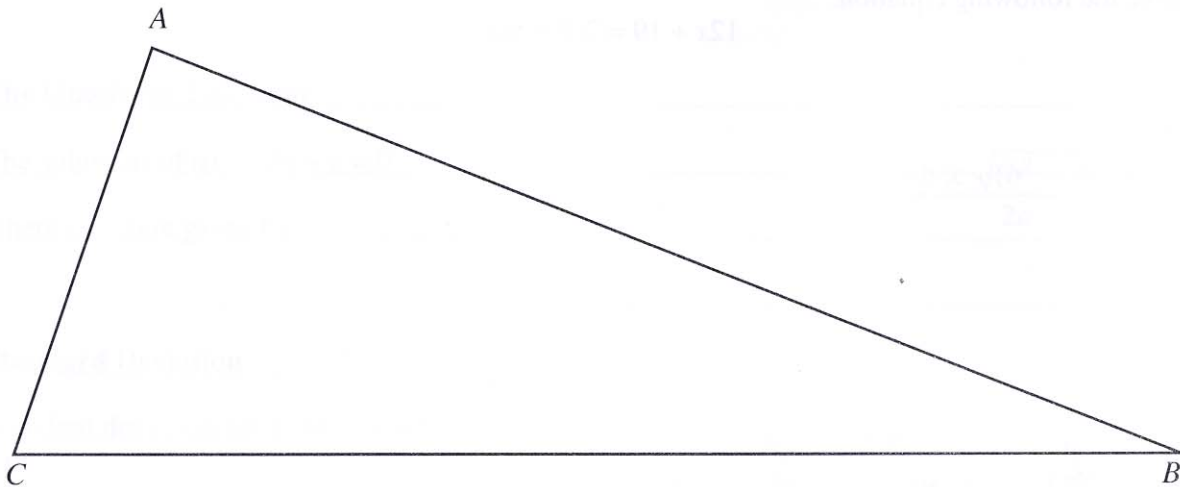**5.** Find and shade the region of points **inside the triangle *ABC*** that satisfy both of the following conditions.
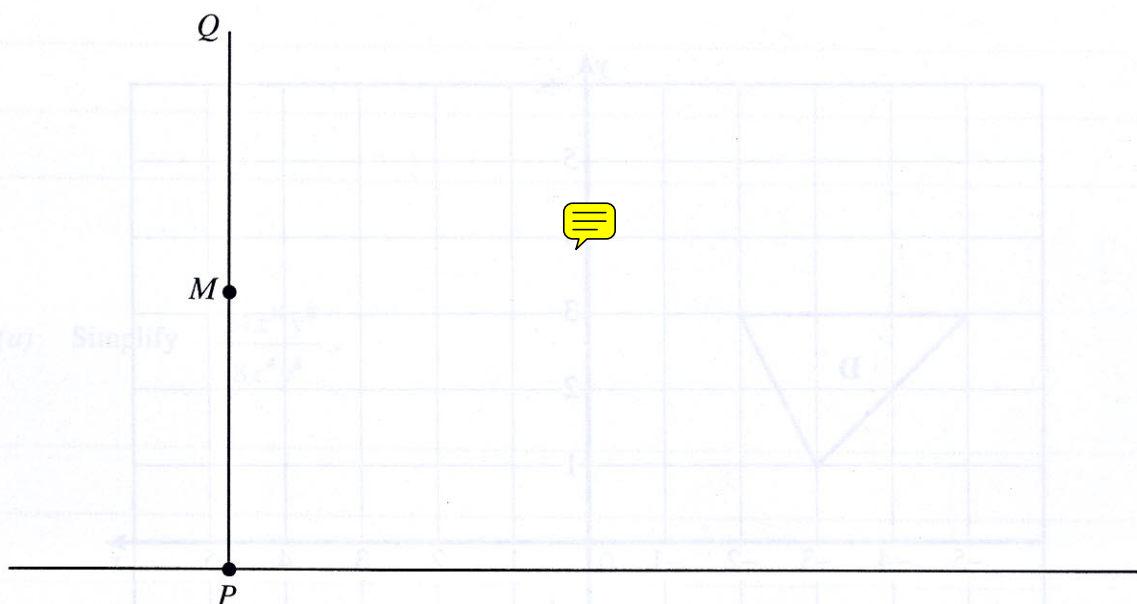
   (i)   The points are nearer to *A* than to *B*.

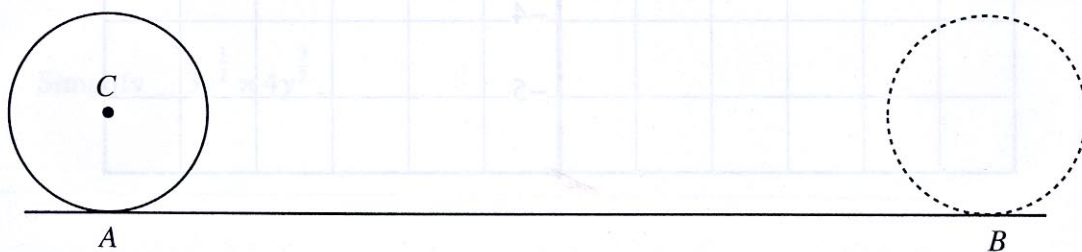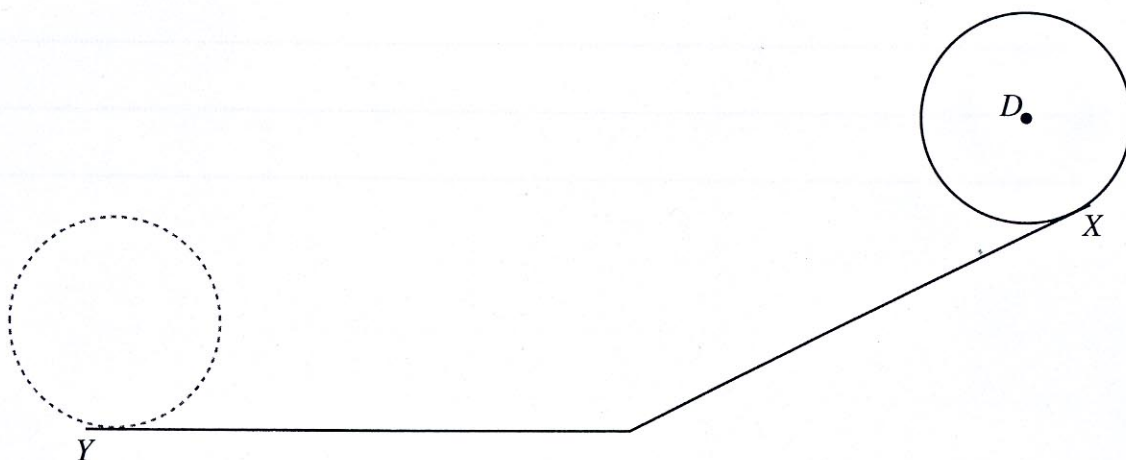   (ii) The points are nearer to *BC* than to *AC*.   [3]

6. *(a)* A rod *PQ* is hinged to the ground at *P*. Draw the locus of its mid-point *M* as it falls to the ground. [1]

(b) A circular disc, centre *C*, is rolled along level ground from *A* to *B*. Draw the locus of *C*. [1]

(c) A circular disc, centre *D*, is rolled down a slope and then along level ground. Draw the locus of *D* as the disc is rolled from *X* to *Y*. [2]

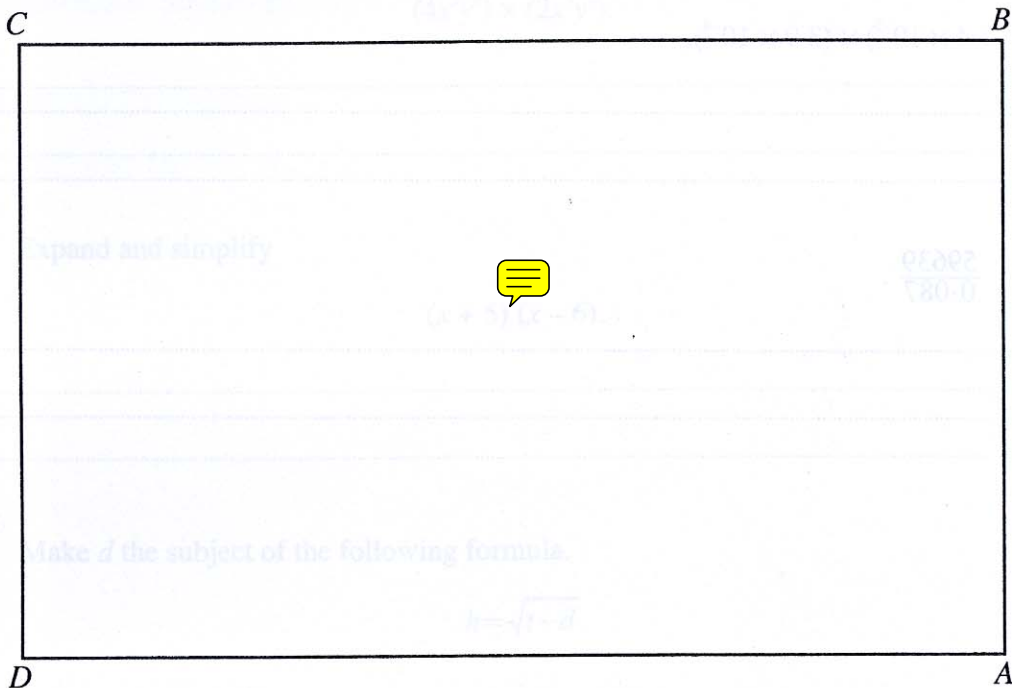**3.** Find and shade the region of points that satisfy both of the following conditions.

(i)   The points are nearer to A than to B.

(ii) They are not further than 7 cm from B.

[3]

A

B

6. *ABCD* is a rectangle.

C   B

D   A

(a)   Draw the locus of all the points inside the rectangle whose distance from *AB* is the same as their distance from *AD*.

(b)   Draw the locus of all the points inside the rectangle which are 6 cm from *DC*.

(c)   Draw the locus of all the points inside the rectangle whose distance from *A* is the same as the length of *AB*.

[3]

5. A dog is tied to a 4 m length of rope, at the other end of which is a ring. This can slide over a rod AB, attached to a brick wall. The ring cannot slide off the rod due to stoppers at A and B.

dog

4 m length of rope

A

B

brick wall

brick wall

ring

rod
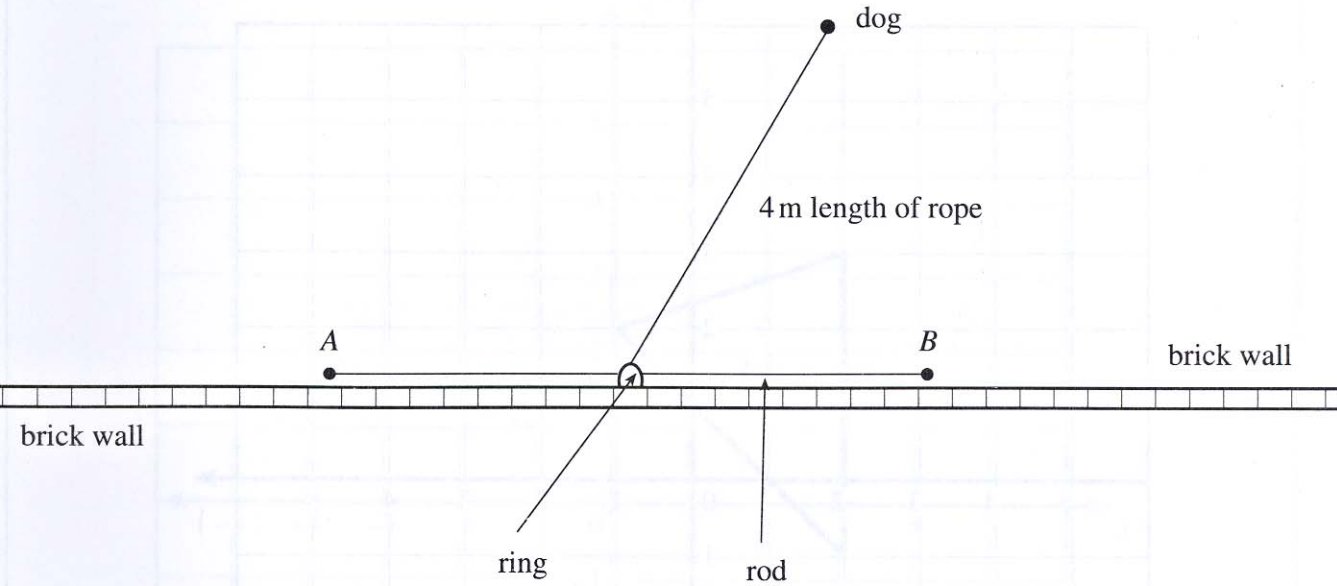
Using a scale of 1 cm to represent 1 m, draw on the diagram below the region in which the dog can move. [3]

brick wall A B brick wall