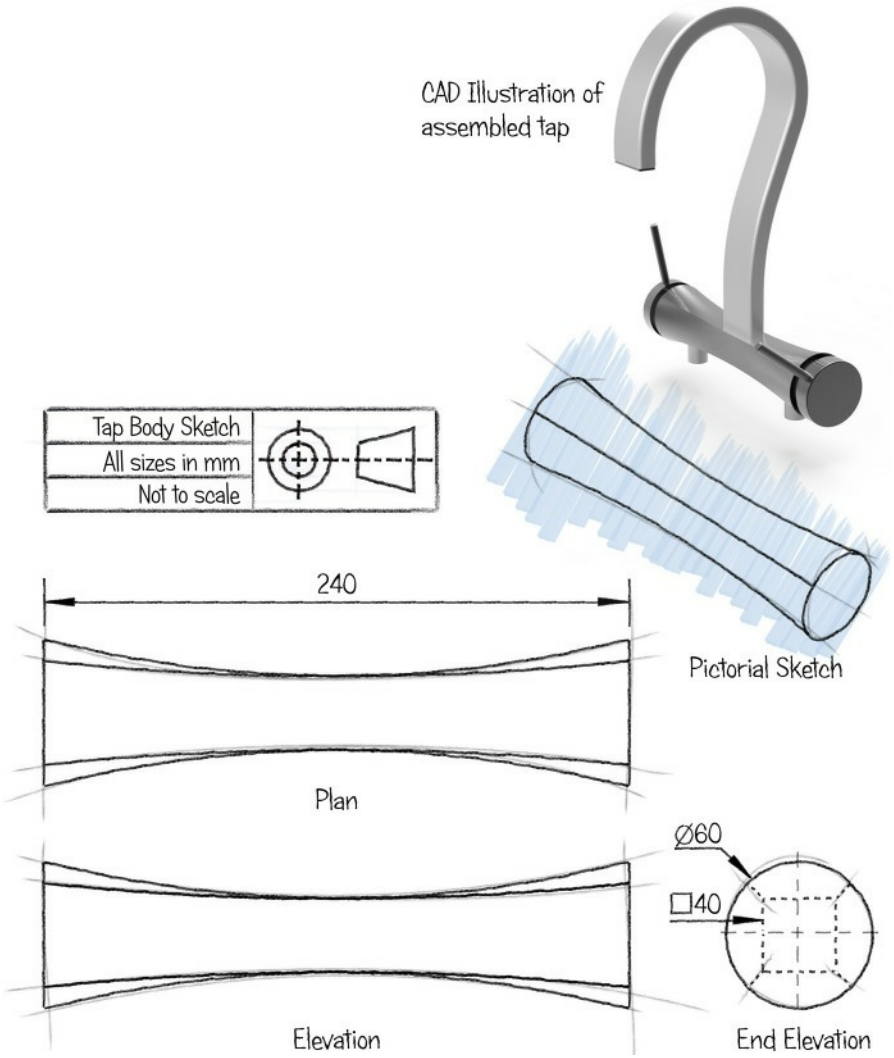
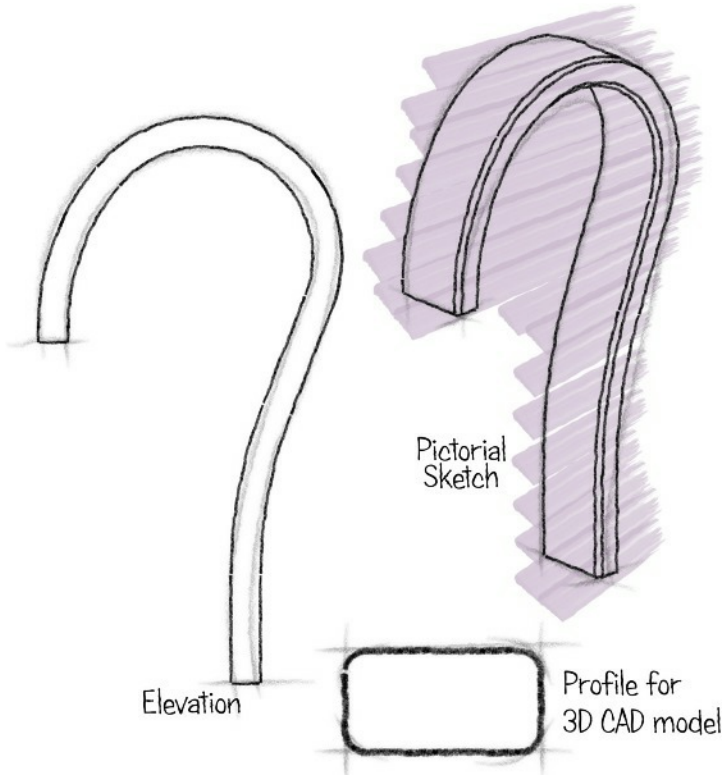
5.



Preliminary sketches of a tap body and an assembled 3D CAD model of the tap are shown above.

(a) Describe, with reference to 3D CAD modelling techniques, how the tap body can be modelled. You should make references to the dimensions shown above. **3**

5. (continued)



Preliminary sketches of the neck of the tap are shown above.

(b) Describe, with reference to 3D CAD modelling techniques, how the neck of the tap can be created and hollowed to allow water to flow through it. **2**

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5. (continued)

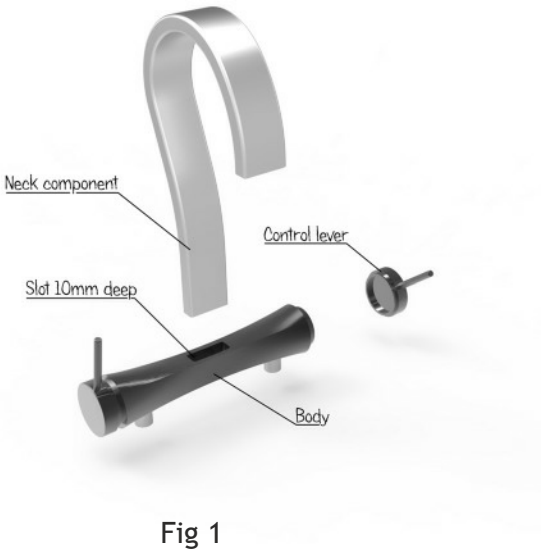

Fig 1

A partially assembled 3D model of the tap is shown in Fig 1 above.

Fig 2

The tap components shown in Fig 2 above were created using a "bottom up" approach.

(c) Describe "bottom-up" CAD modelling. **2**

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5. (continued)

(d) (i) Describe, with reference to constraints, how the neck and body components of the tap will be assembled. **2**

(ii) Describe, with reference to constraints, how the control lever and body components of the tap will be assembled. **2**