

N4 N5

Graphic communication

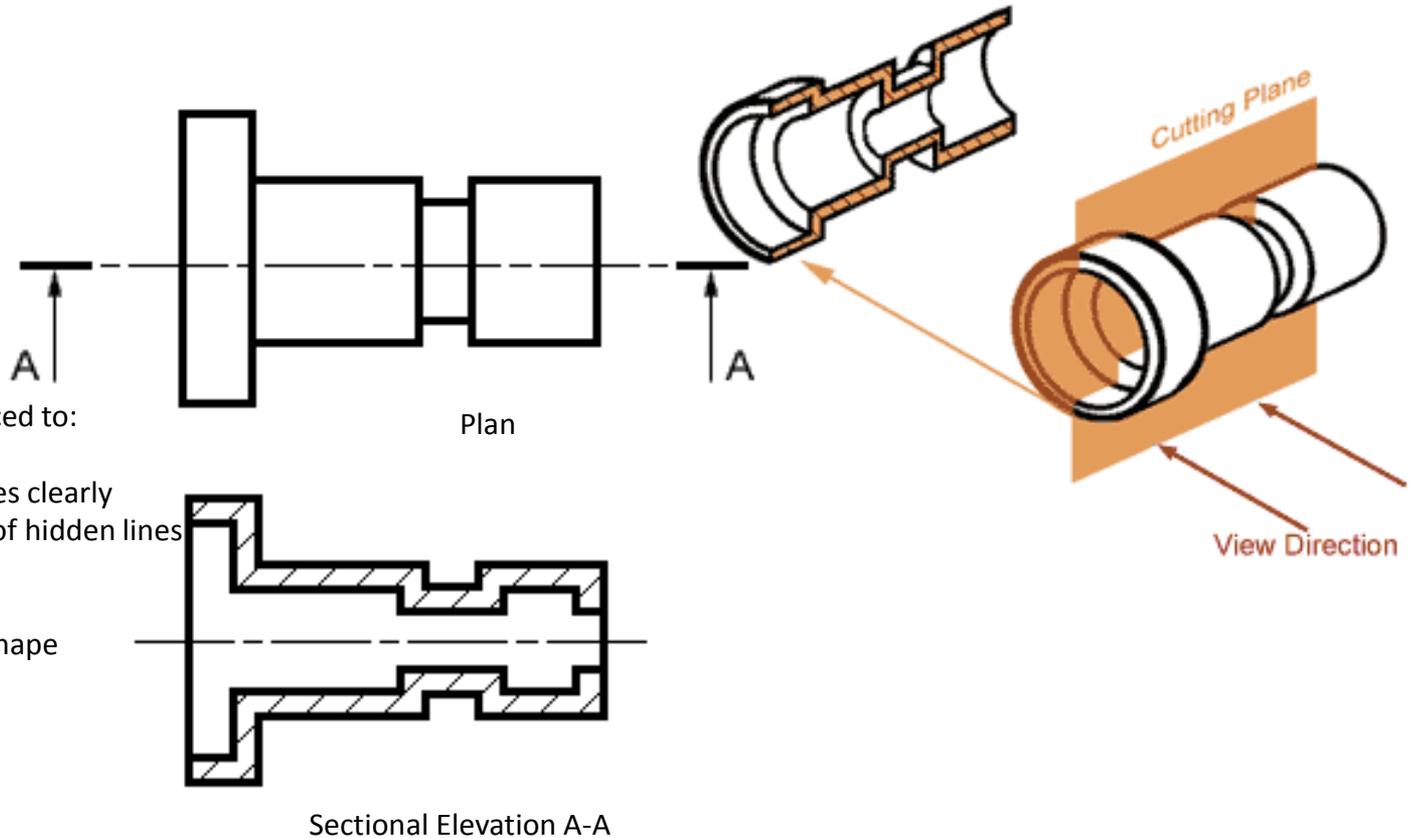
Sectioning

Name: Class:..... Teacher:.....

Introduction

A **section view** is a **view** used on a **drawing** to show an area or hidden part of an object by cutting away or removing some of that object. The cut line is called a “cutting plane”, and can be done in several ways.

A sectional view shows what is left of the object after the imaginary slice has been removed. The diagram below shows a sectional view, and how a cutting plane works



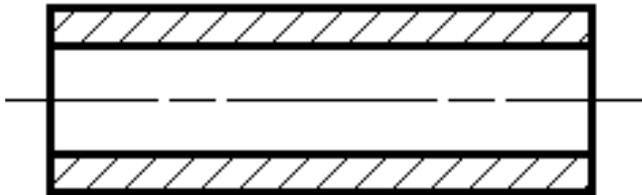
Sectional views are produced to:

1. Clarify drawings
2. Show internal features clearly
3. Reduce the number of hidden lines required.
4. Aid dimensioning
5. Show cross section shape
6. Clarify an assembly

Cross Hatching

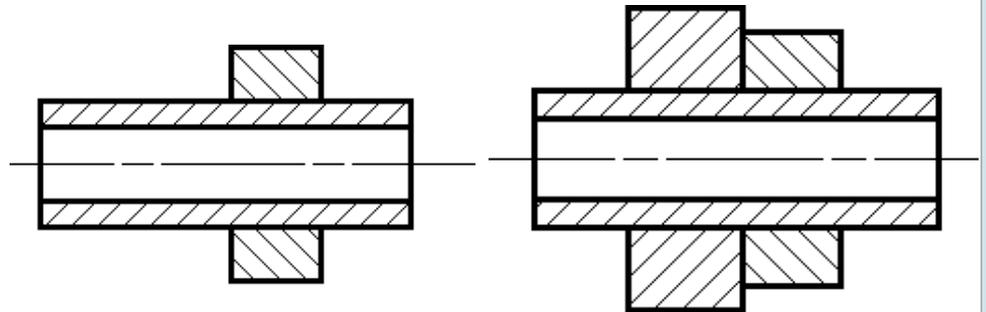
On sectional views, solid areas (areas that the cutting plane has passed through) should be hatched to indicate that they are solid. Hatching is drawn with a thin continuous line, equally spaced (preferably about 4mm apart, though never less than 1mm) and preferably at an angle of 45°.

Cross Hatching a single object/part.



When you are hatching an object but the objects has areas that are separated, all areas of the object should be hatched in the same direction and with the same spacing.

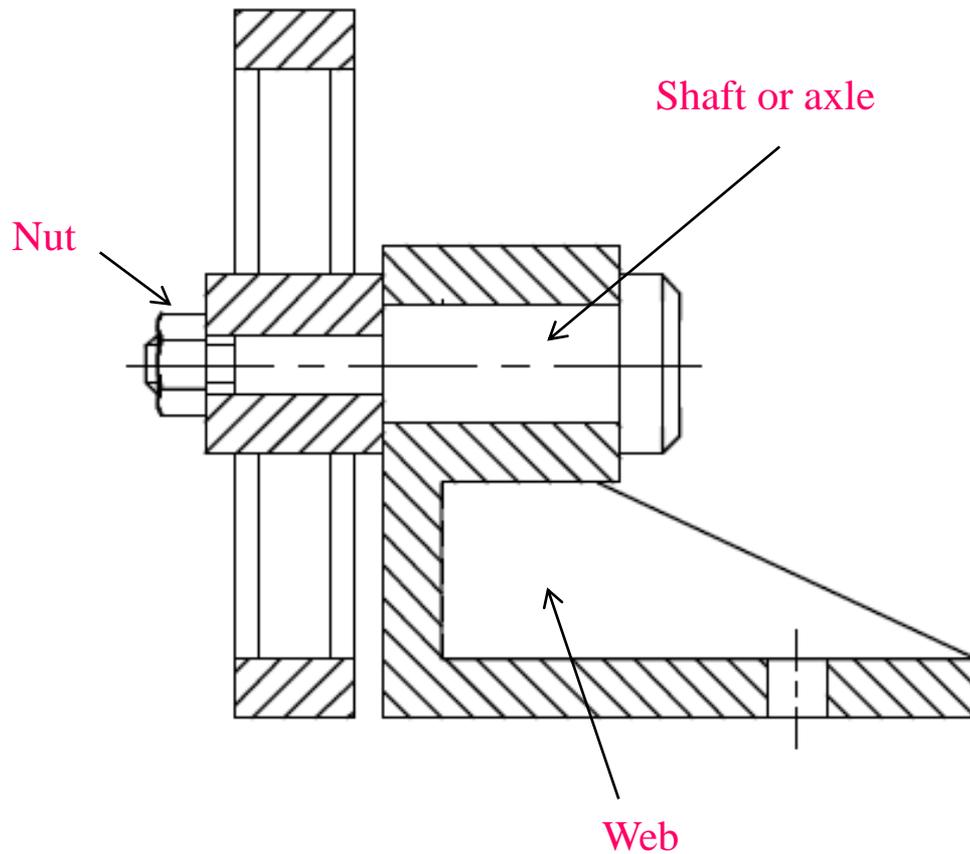
Cross Hatching an assembly with multiple parts



When hatching assembled parts, the direction of the hatching should be reversed on adjacent parts. If more than two parts are adjacent, then the hatching should be staggered or the spacing changed to emphasise the fact that these parts are separate.

Parts that are not Cross Hatched

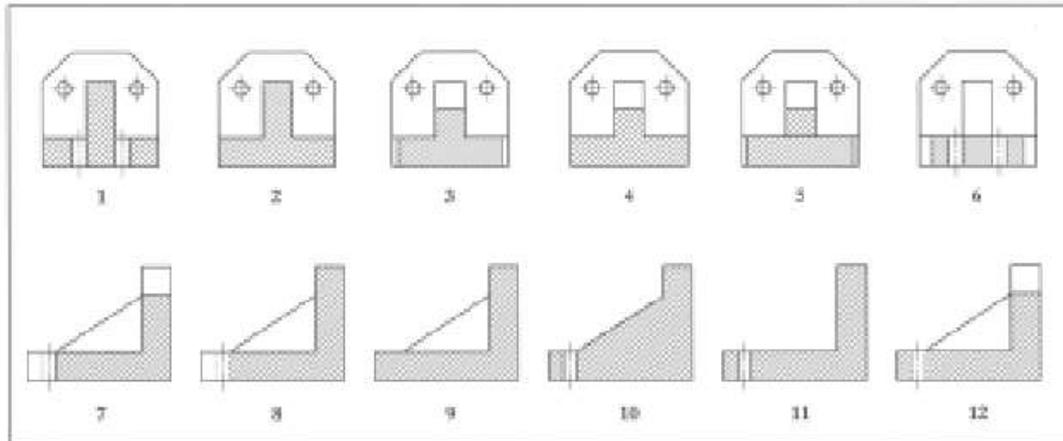
To improve clarity in a sectioned drawing, standard parts will not be cross hatched even though the cutting plane passes them. These standard parts include solid shafts, bolts and nuts, washers, ribs and spokes of wheels, and webs.



Sample Exam Question 1

The elevation, end elevation and plan of a bracket are given in **Drawing Y**.

(a) Twelve sectional views 1 to 12 are given below (Not to Scale).



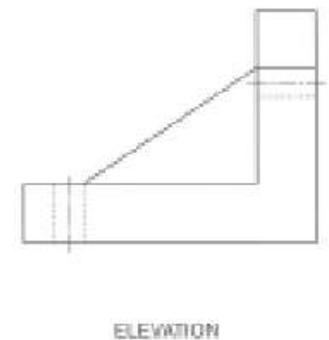
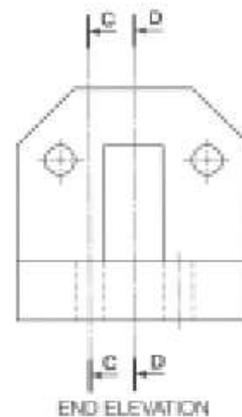
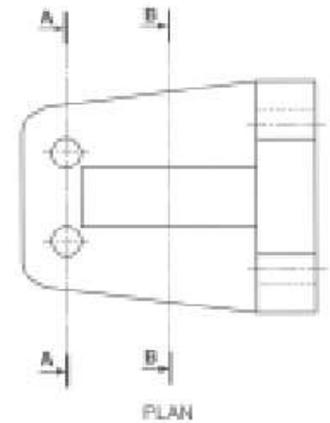
State which of these are the correct sections for **AA**, **BB**, **CC** and **DD**.

Section AA Section BB
 Section CC Section DD **KL 4**

(b) State **two** factors that affect the choice of scale when working on a production drawing.

Answer 1
 Answer 2 **KL 2**

Total (KL 6)

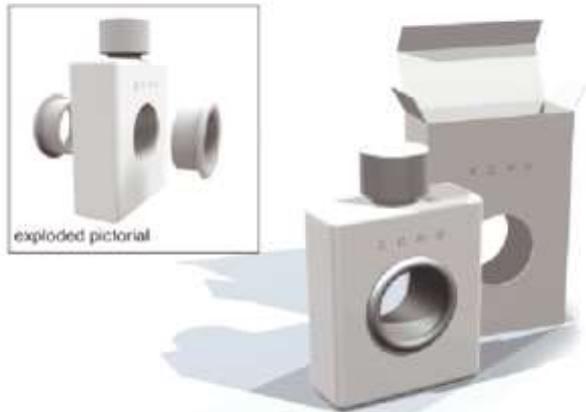


DRAWING Y

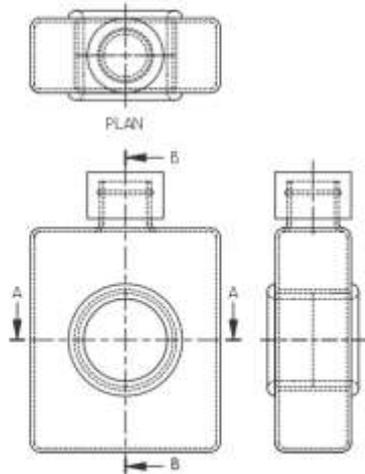
Sample Exam Question 2

7. ECHO is a new fragrance created by "Common Scents". The bottle and packaging have been designed to reflect the product name.

The centre "O" ring consists of two interlocking parts that secure the bottle in the packaging.



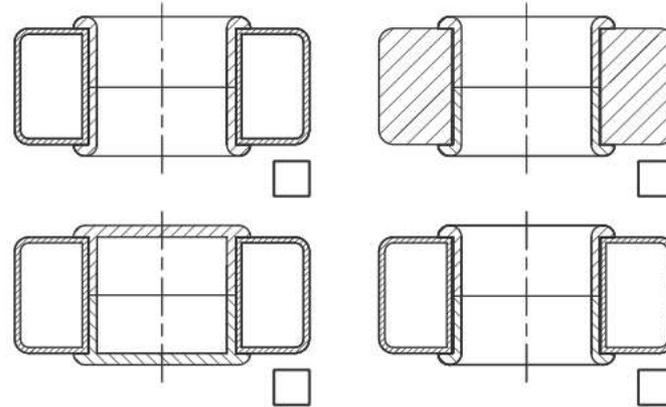
Orthographic sectional views were produced to aid manufacture.



7. (Continued)

(a) Indicate the correct sectional plan **A-A**, indicated in the drawing on the previous page, by ticking a box below.

1



(b) Indicate the correct sectional end elevation **B-B**, indicated in the drawing on the previous page, by ticking a box below.

1

