

## Technical Graphics

Course Code: TEG315115

### Folio

The range of folios submitted was narrower than that of previous years with a large increase in the number of architectural house designs. Many of these folios were completed well although some appeared to start with a CAD modelled house and work backwards through the design process to justify the already arrived at design. Most of the folios that appeared to be created in this way also used CAD extensively and in some cases to the exclusion of final pencil or ink drawings. This trend may need to be addressed in the 2017 Folio Guidelines.

The best completed folios this year were those of an Engineering Product topic. Several of these were completed to a very high standard in all the assessed criteria.

### Criterion 4

Standards varied from just complying to being very poor and inconsistent within a folio. Again the best folios for this criteria were those of an Engineering product topic. Students need to be encouraged to present their work according to Australian Standards. The weakest part this year was dimensioning, some folios had correctly completed this in one part of the folio but changed to non-standard dimensioning in another part.

### Criterion 5

Presentation and communication also varied a great deal across the folios. The poorest submitted included a large amount of CAD modelling that had little relevance to the folio topic. One folio for example had 6 pages of CAD rendered images of the same couch and pool table shown from many different angles – these were not relevant to the brief. Another folio contained many CAD renders of laundry appliances shown from many angles, again not relevant to the folio brief.

An issue that may need to be addressed in the future is that a single CAD model once finished can be used to create many other views such as floor plans, elevations and sections with little extra rigour from the student. There could be a need to specify a minimum number for the final pencil or ink drawings being submitted as part of the folio.

### Criterion 7

Design process relevant to the brief was very well done in several folios, again mostly evident in the Engineering based works. Most folios however lacked relevant research specific to the brief. Many folios lacked design development work which is so important in the design process and their subsequent final drawings often lacked detail and accuracy accordingly.

## Written Exam

As with the folio marking, the exams varied enormously through both criteria. Surprisingly this year several candidates scored as little as possible by not completing any of the questions and did not show any indication of understanding apart from the most basic level of transferring the problem from the booklet to the exam paper. Several candidates completed all required questions to a very high degree of accuracy.

### Question 1

Generally understood how to produce the orthographic solution but most failed to draw the ellipse end view. There were some scale variations from the 1:5 given. There was some confusion regarding first and third angle drawing.

## Question 2

Very few candidates correctly solved the problem. Most failed to draw the necessary auxiliary view. Most did not recognise that  $45^\circ$  was the critical angle needed to be examined to determine the ladder fit. Some correct answers used True Length method across the section of hallway, most correct answers used an auxiliary view at right angles to the  $45^\circ$  corner.

## Question 3

No students correctly graphically solved this question. Nearly all students correctly “pinned through” the question. Many attempts involved auxiliary views and wing tip heights but very few went on to create a point view. Some did do this but then did not apply true lengths to find the wing tips and thus the correct angle.

## Question 4

Mostly transferred correctly however some students pinned through the isometric drawing and tried to solve from there. About half the students correctly drew the plan and elevation needed but not all of these then placed point A correctly along one edge of the pyramid. Most correct solutions were determined by true length lines, some used base and height from the drawing and then drew in the hypotenuse to also find the correct answer. A few students used both methods to arrive at the same answer.

## Question 5

Attempted by most students and was the best answered question on the paper. Students were able to plot the roulette and then plot the locus of P. Some answers were almost correct but slightly out as the students followed the radial divisions of the roulette rather than using a centre line and radius along the correct spoke (circle division by 12).

## Question 6

Only answered by a few students who achieved a correct solution. The cam profile had to be plotted in 2D before the follower displacement diagram could be produced from this.

## Question 7

Most students attempting this question could successfully plot a helix but could not then draw the double helix needed to complete the vane.

## Question 8

Answered by most students with the majority successfully drawing the correct end elevation. Very few attempts managed to produce the correct lines of intersection between the shapes on the elevation.

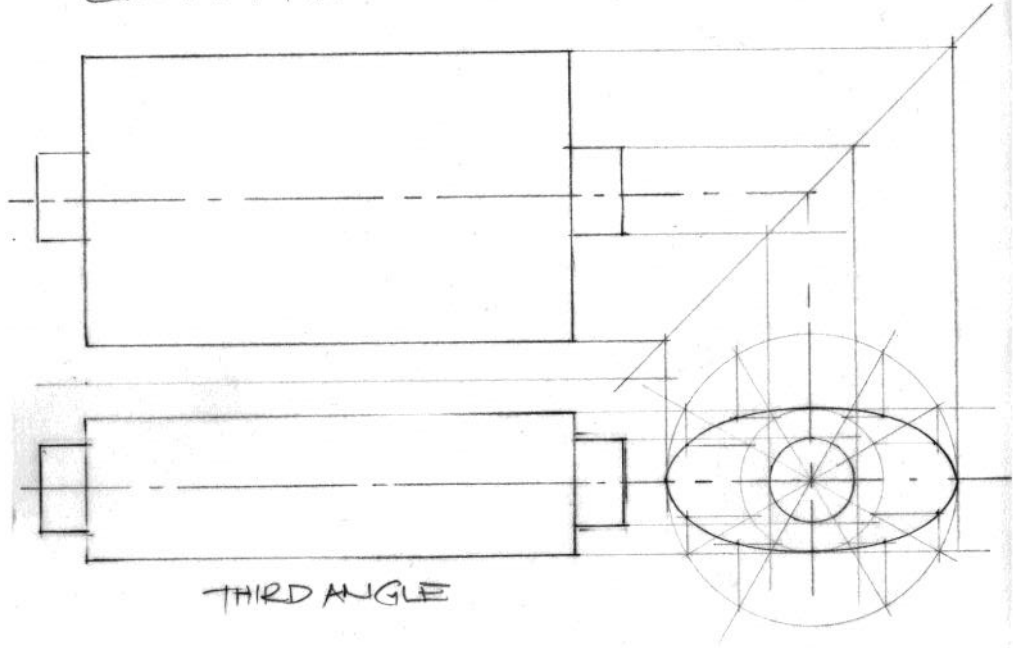
## Question 9

Answered by only a few candidates and very poorly. Only one totally correct solution showing the correct points of contact between the solids. Some students drew cylinder B as a square in the end elevation.

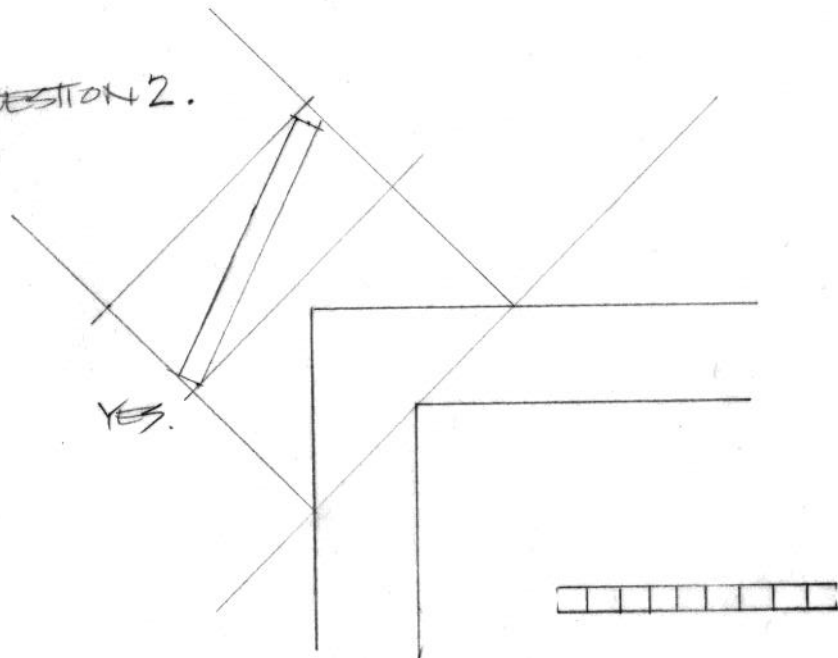
## Question 10

Generally a partly well answered question with most students correctly drawing the true shape of B, but only one or two managed to develop the surface of part A.

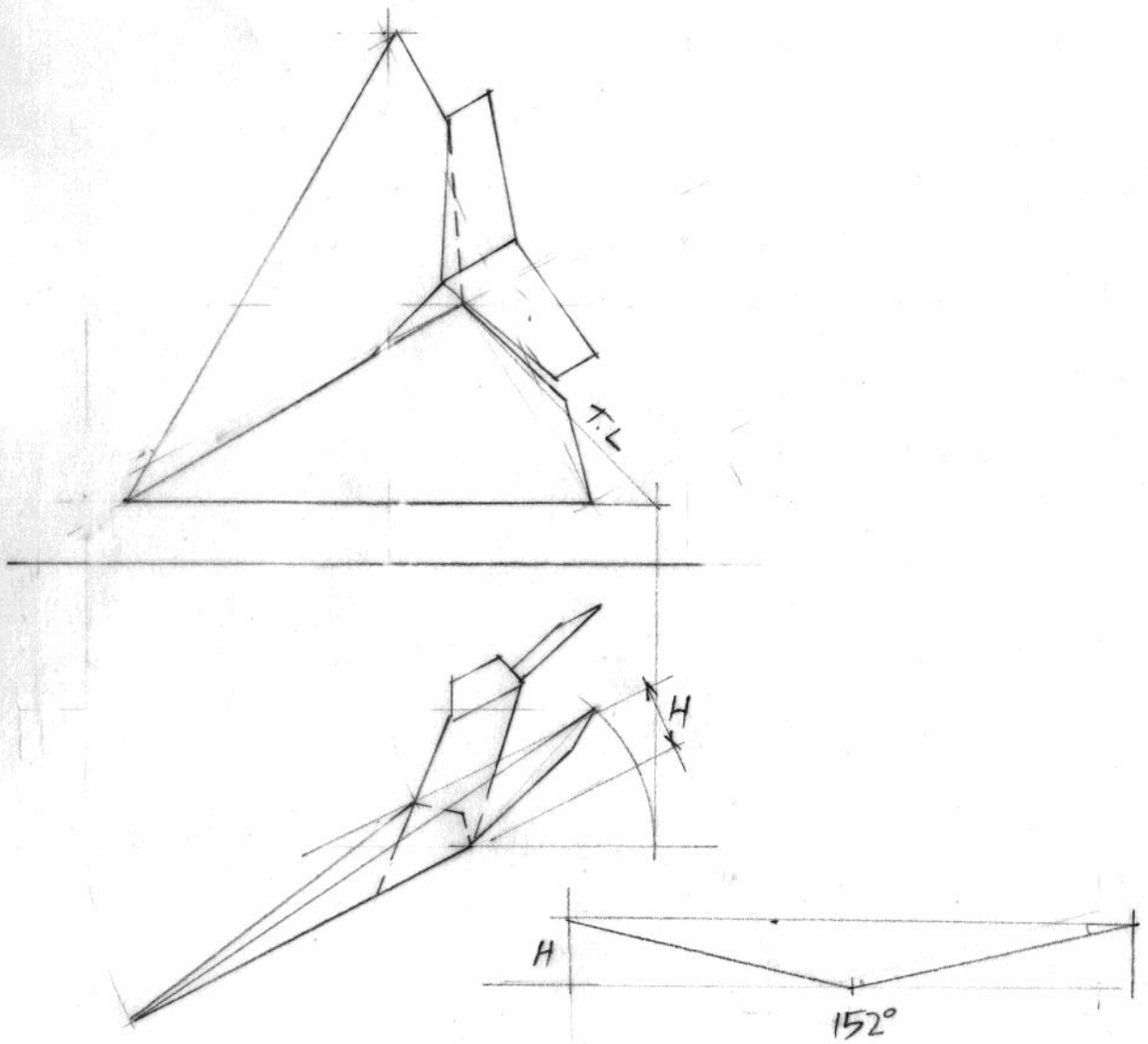
QUESTION 1.



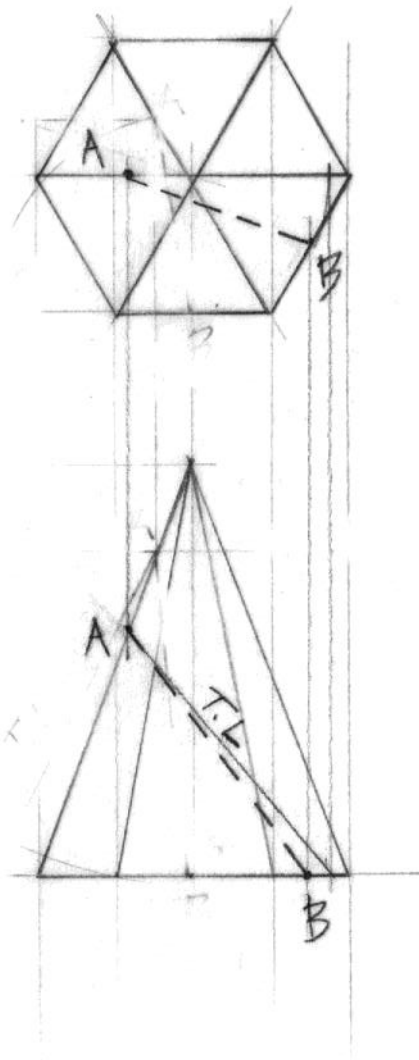
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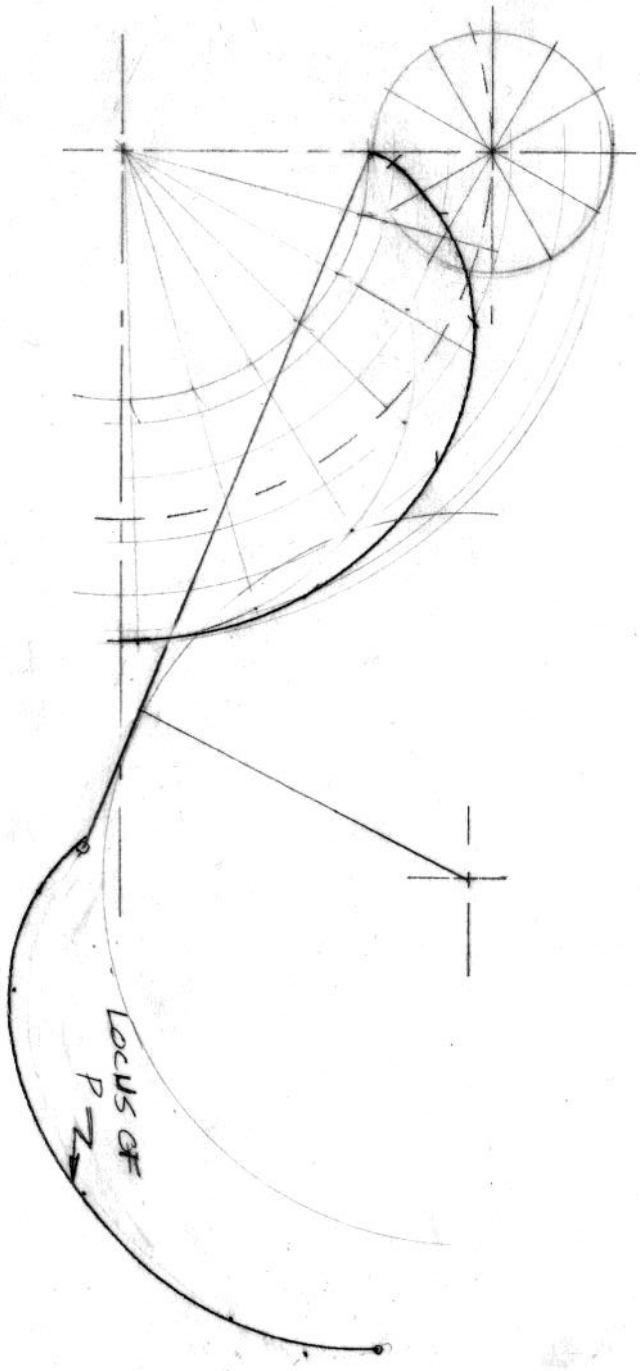
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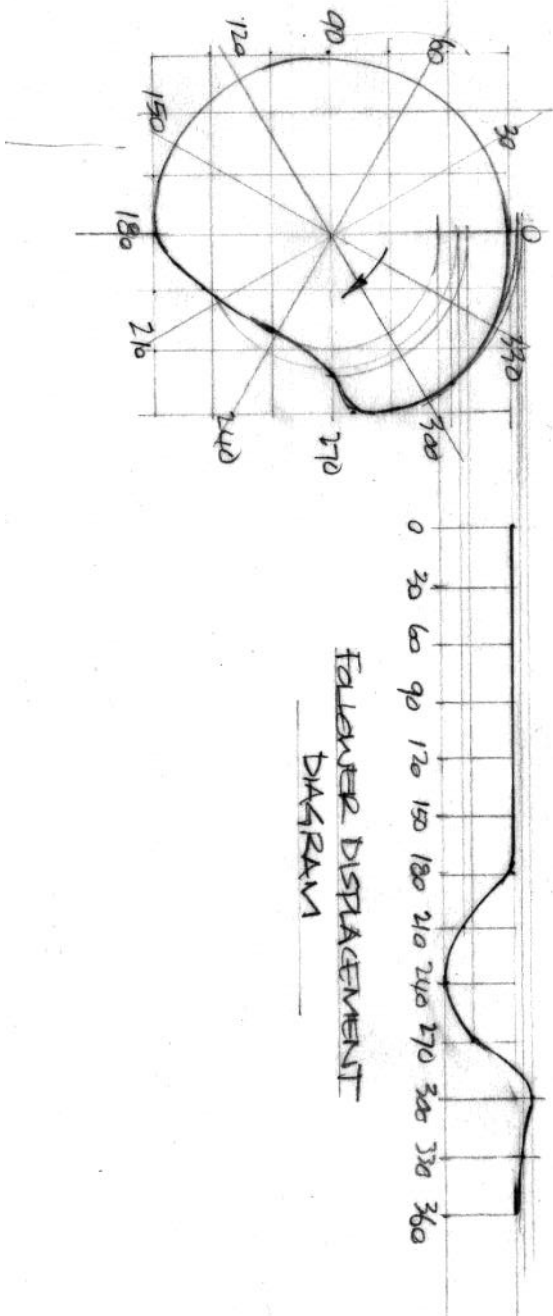
QUESTION 4.



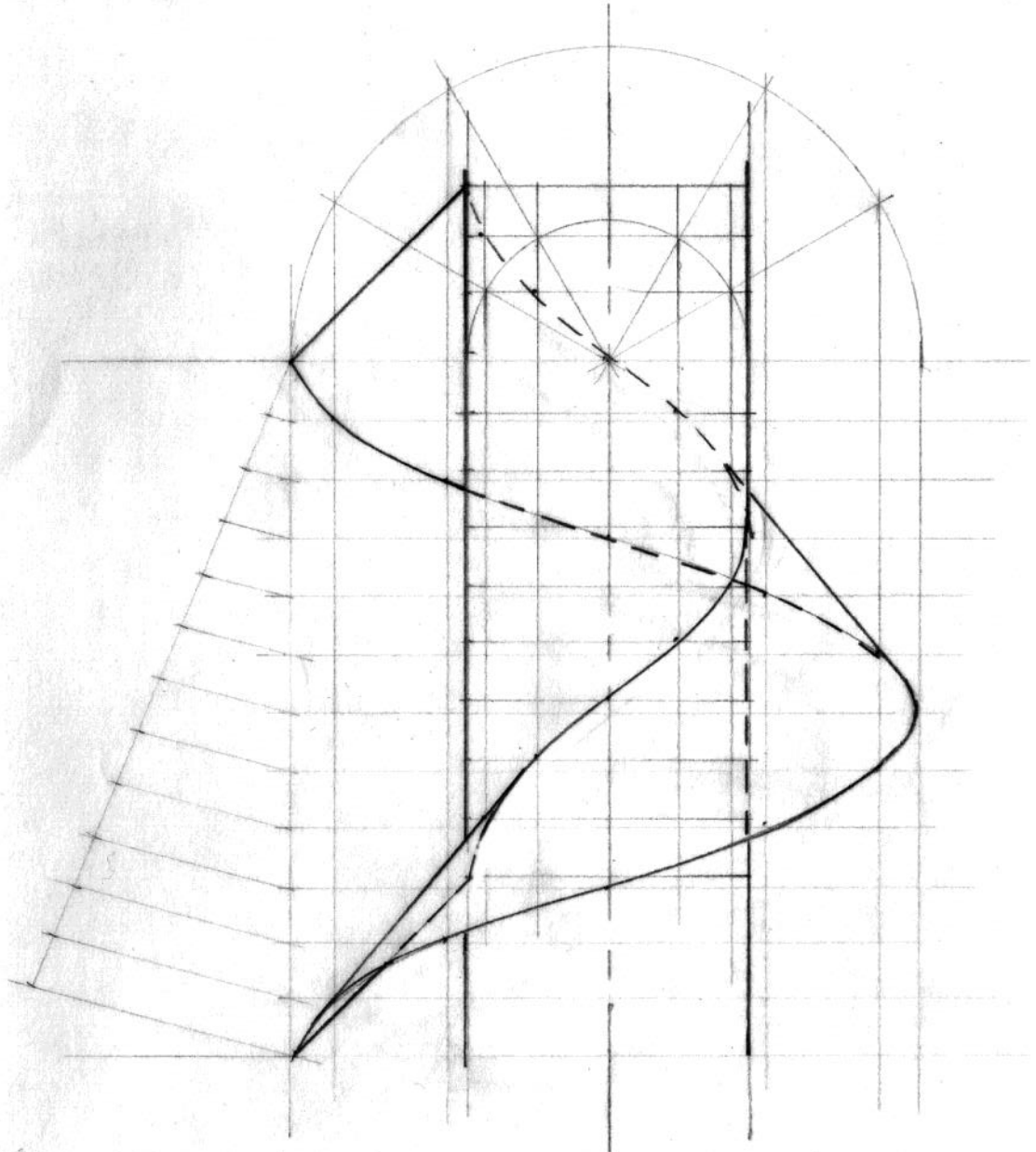
QUESTION 5.



QUESTION 6.

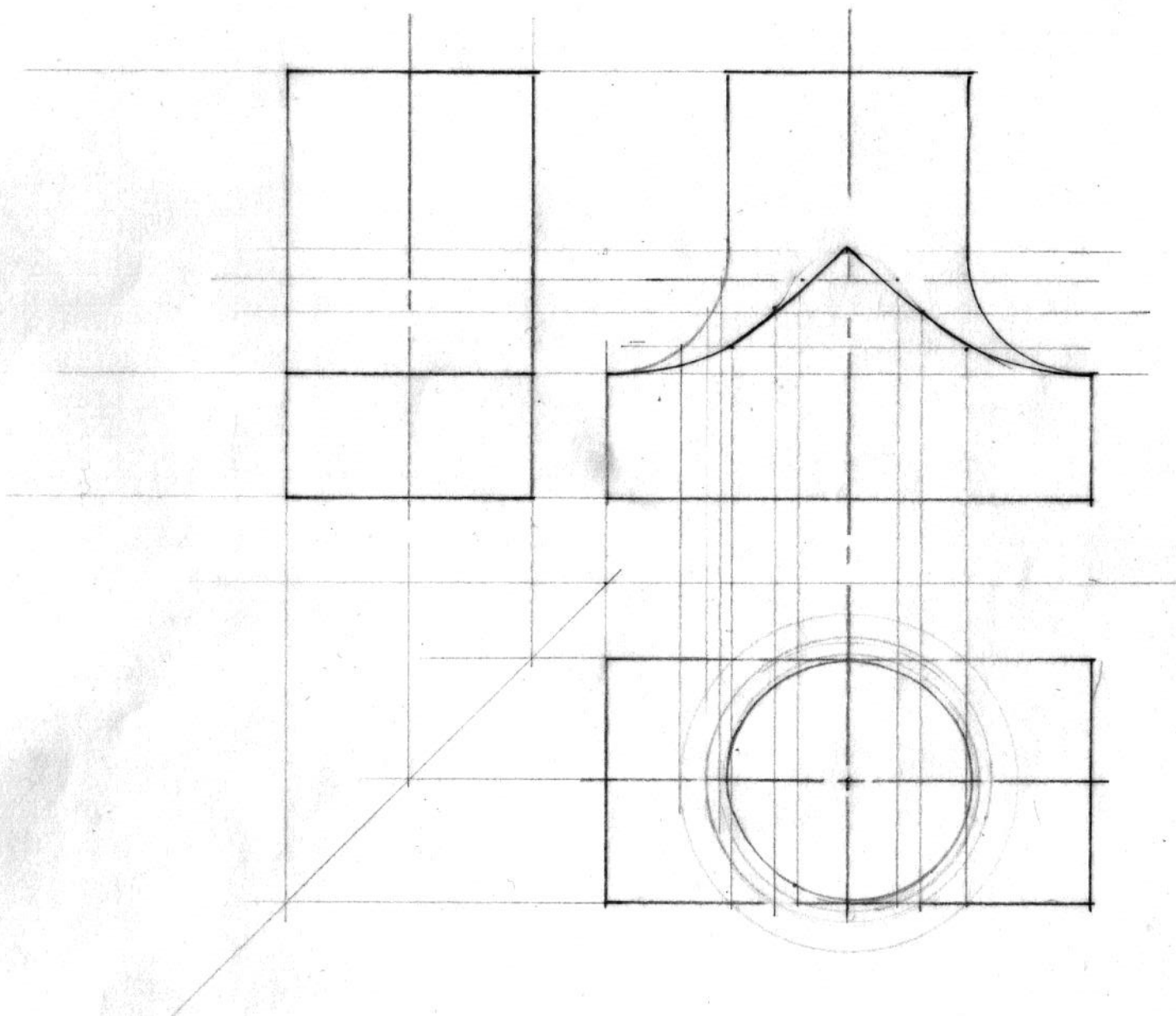


QUESTION 7.

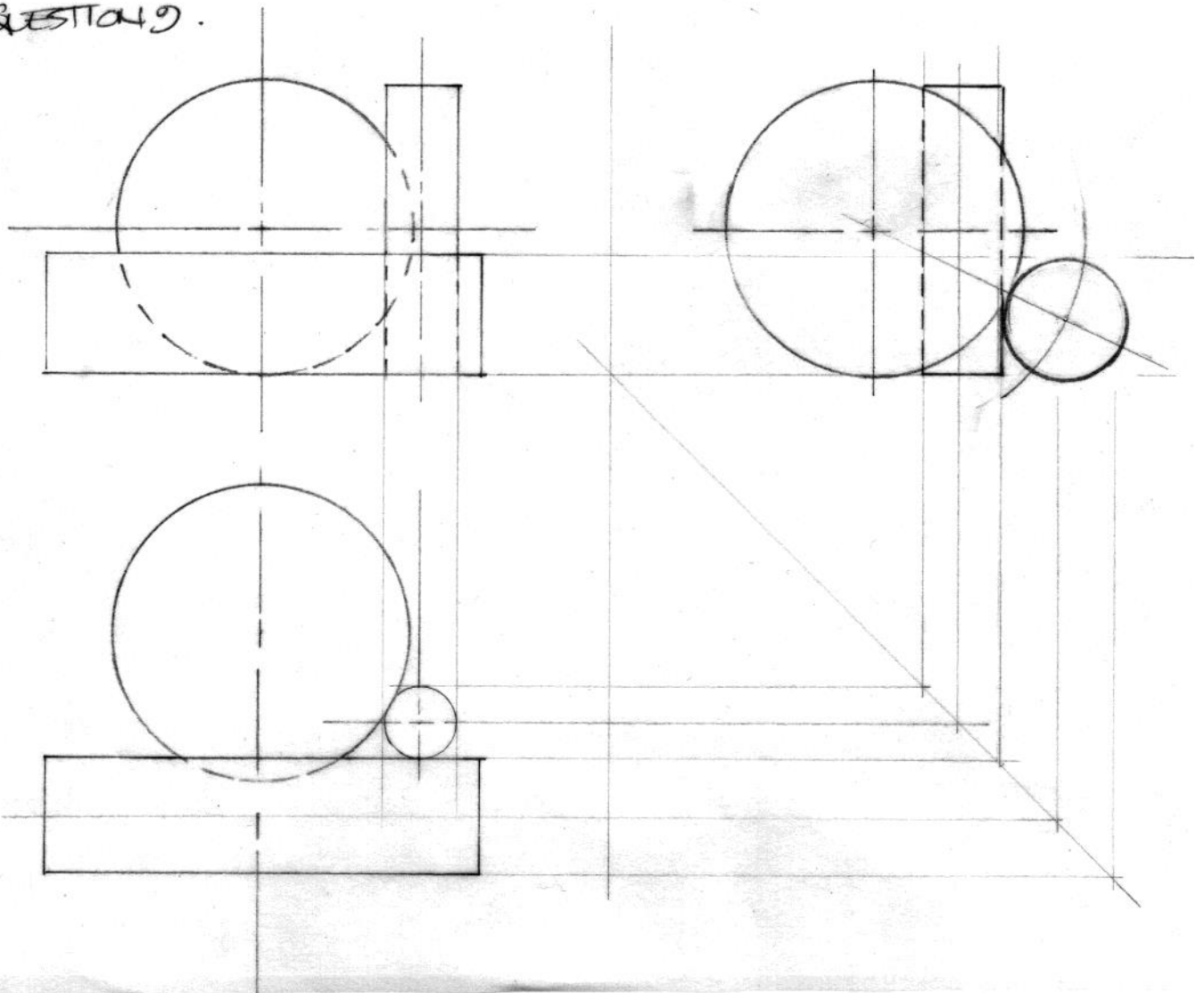




QUESTION 3.



ÜBUNG 19.



QUESTION 10.

