

## *TECHNICAL GRAPHICS (TEG315115)*

### FEEDBACK FOR STUDENTS AND TEACHERS

#### WRITTEN EXAM GENERAL COMMENTS

##### QUESTION 1

Every student attempted this question and several achieved a fully correct answer. The most common error was in assuming the line division would be into 6 parts, where 7 were needed for all the steps. Some incorrect answers divided the line mathematically and stepped out the divisions creating a longitudinal error of significance.

##### QUESTION 2

Most students completed the force vector diagram correctly with small differences in results due to the angles. Some attempts used the arrows as force components instead of scaling these from the figures given. Very few had no idea or did not attempt an answer.

##### QUESTION 3

About half of the attempts were correctly completed with slightly varying curves mainly due to inaccuracies in their compass work. A few students unwound the cord in a clockwise direction. Nearly all students attempted this question.

##### QUESTION 4

Overall this question was poorly answered, only about five students completed it correctly. Some students tried to solve it by drawing the parabola in a rectangle instead of using the directrix and eccentricity.

##### QUESTION 5

Only answered by four students two of whom achieved totally correct answers and included their trammel with the exam paper.

### QUESTION 6

Attempted by several students with very poor overall results, not one student was able to complete the question correctly. Students did not realize that two auxiliary views are needed to solve the problem.

### QUESTION 7

Attempted by most students with nearly all misreading or incorrectly interpreting the question by placing the chute in the centre of the hopper, and not against a flat wall. Two students correctly completed the question, most found the true lengths but due to incorrect interpretation did not correctly draw the true shapes.

### QUESTION 8

Answered by the majority of students and mostly well answered. Some students only plotted one revolution of the cord along the full length of the cone instead of two. Several students had totally correct answers. A few students also recognised that the top view would show a double Archimedean spiral.

### QUESTION 9

Only four students attempted this question with only one student almost achieving the correct lines of interpenetration. Only one student recognised that an end view was needed to get the correct solution.

### QUESTION 10

Only one student attempted this question and achieved a totally correct solution.

## PRACTICAL FOLIO ASSESSMENT COMMENTS:

### TECHNICAL GRAPHICS FOLIO NOTES

#### CRITERION 4: USE STANDARDS AND CONVENTIONS IN THE PRODUCTION OF SKETCHES AND DRAWINGS

Students produced drawings for designed products ranging from engineered components, furniture to architecture. However, there was a lack of industry appropriate conventions followed. Particularly in regard to dimensioning, the accurate use of scales, title blocks containing all relevant information and accuracy of line work.

- Many drawings lacked dimensions, particularly in elevation drawings, or were dimensioned incorrectly for example using centimetres instead of millimetres and at times a mix of metres and millimetres in the same drawing.
- Architectural design projects often had scale issues in regard Australian conventions around door dimensions or stair tread and rise, the latter showing no or very little proof of how the rise over run works in their designs relating to accepted standards.
- Drawings not being drawn to a specific scale, some drawings were drawn to non-standard scale.
- Title blocks missing scales, north arrows and drawing titles, this is essential information regarding details about the drawings relationships to the real world.
- There was often a lack of clarity in line work for example - Similar line weights used for all lines and lines not meeting or aligning, showing a basic misunderstanding of Australian Standards.

#### CRITERION 5 PRESENT AND COMMUNICATE INFORMATION

Often the focus on communicating information about the designed product was placed on the CADD modelling instead of the technical drawings. The majority of CADD modelling focused on multiple 3D representations (one and two point perspectives) which did not provide any technical information about the product. For example dimensions, components or assembly. As a result many folios were lacking in drawings completed by hand and lacking in sufficient technical drawings, whether hand drawn or CADD, to communicate the resolved design of a product. In

summary one Cadd model presented in different views such as elevations and sections should not replace several hand drawn views of the designs.

Some folios were compiled in a way which made it difficult to understand what the student was trying to achieve and the process they followed to achieve it.

#### CRITERION 7: ADDRESS A BRIEF USING THE DESIGN PROCESS AND RESEARCH

Most folios demonstrated a lack of understanding around the design process with a variety of presentations some of which started with the problem solved rather than solving an existing explicit problem or requirement.

There was a link between clearly articulated design briefs and strong student outcomes. A clearly articulated design brief identified a specific need or problem and outlined constraints which narrowed the project to something which could be achieved within the time allocated for the folio.

Research was strong across many of the folios with most students investigating appropriate precedents. Analysis of the precedents would have been stronger if more students had used design principles and elements as an analysis tool as opposed to their personal taste. This was apparent in the language used to discuss the precedent images, most discussions started with the phrase “I like ...” or “I will use...” or “ I love this...” Discussion should be based around investigation of options with analysis and arguments supporting final chosen aspects of the design.

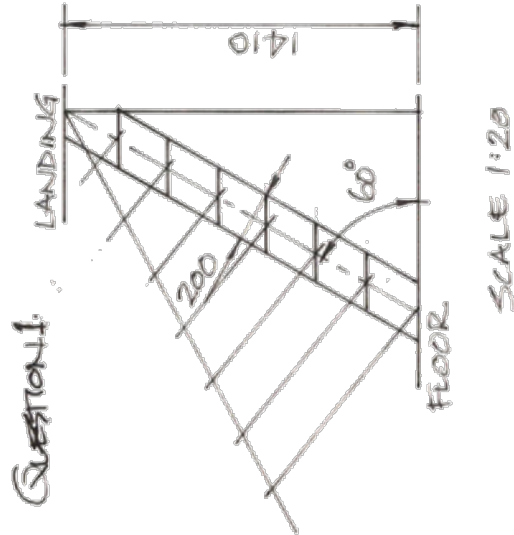
Architectural projects lacked real sites with appropriate site analysis undertaken during the research phase. This analysis should inform the development of ideas, influence of the Housing and Design course showed in many “architectural design” folios.

Most folios lacked an exploration and development of ideas through annotated sketches. Often only a single well resolved sketch was provided with no indication of how the student reached the design. It is essential for the candidates to include their early rough sketches showing ideation and early development through to final ideas ready for concept development. Folios that arrived at a solution without showing such development did not achieve well in the design process and research area.

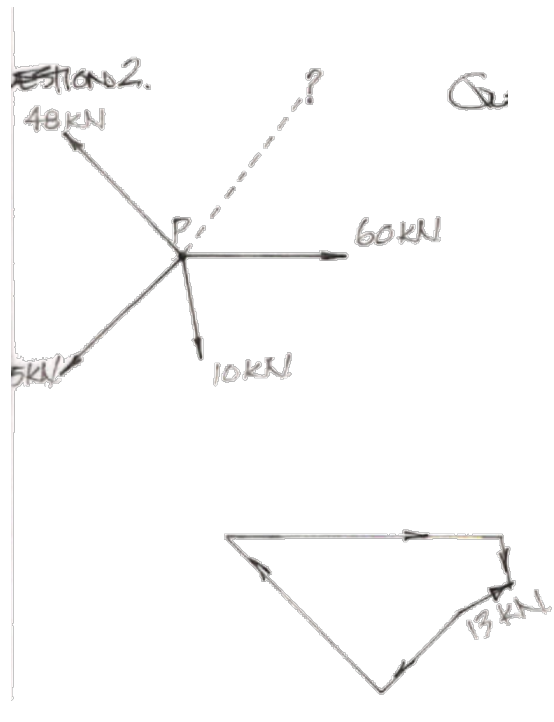
The majority of folios did not include a final hand drawn presentation image of the completed product. (although most did prioritise this as their CADD content) and some did not include a written evaluation. This resulted in folios which appeared incomplete in terms on resolving and evaluating the product and the process. It is essential that some discussion and explanation be included in the final drawings (Cadd and hand drawn) to describe appropriate reason and purpose of the design.

SOLUTIONS

QUESTIONS 1

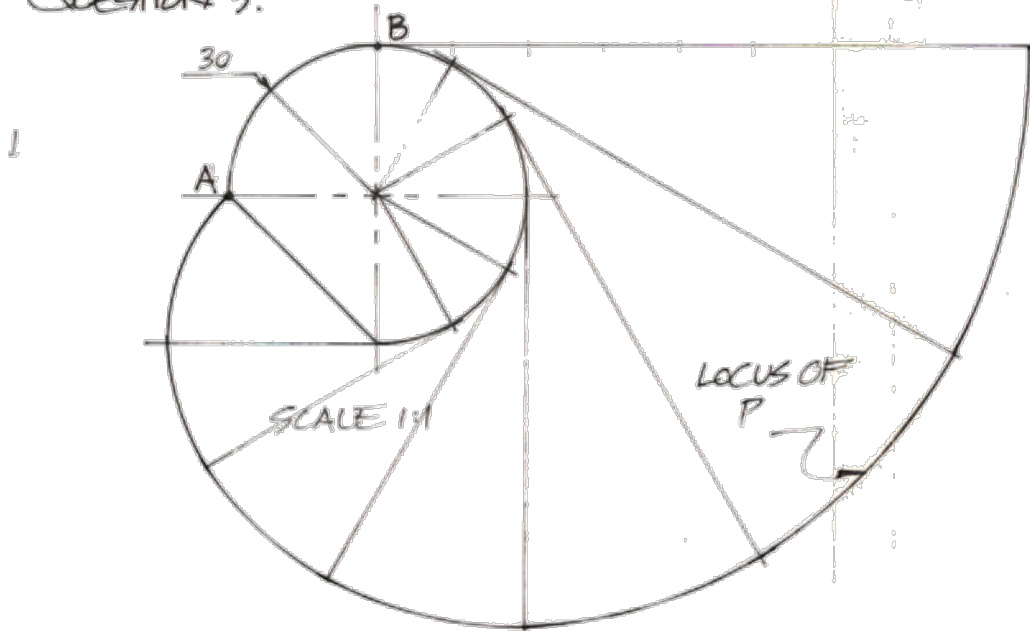


QUESTIONS 2



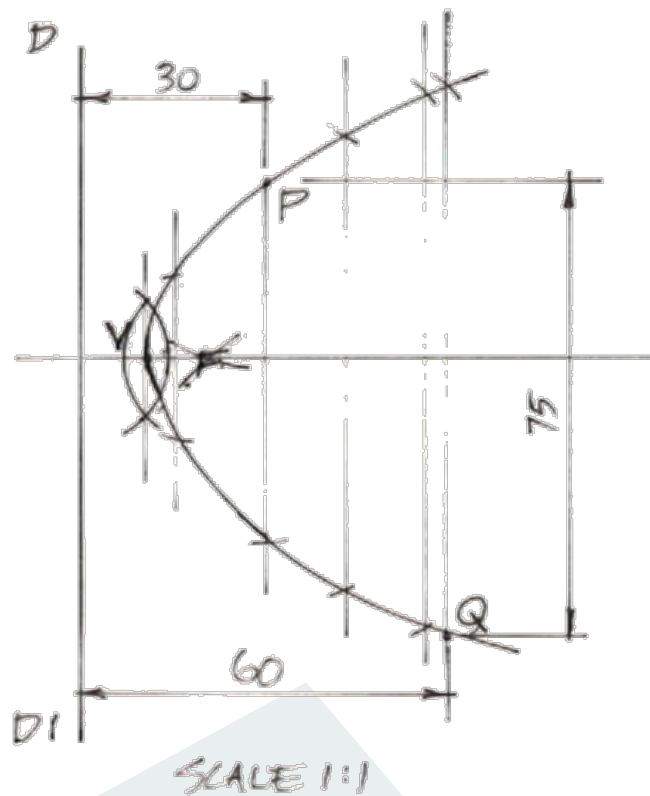
QUESTIONS 3

QUESTION 3.

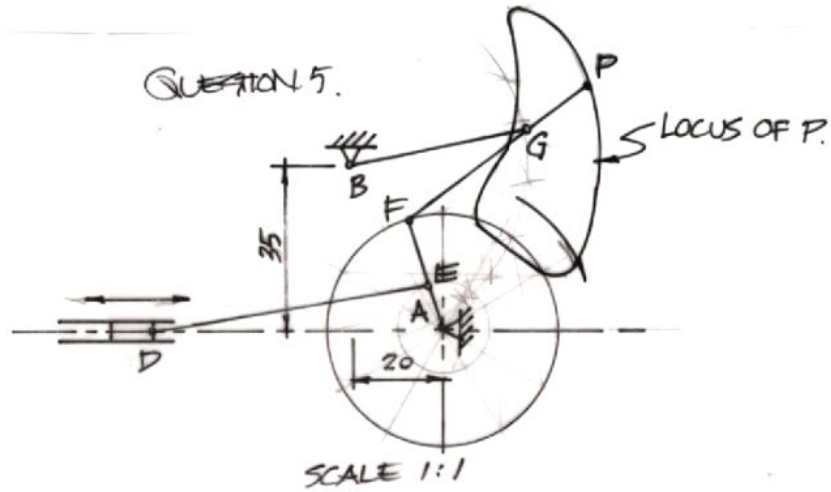


QUESTION 4

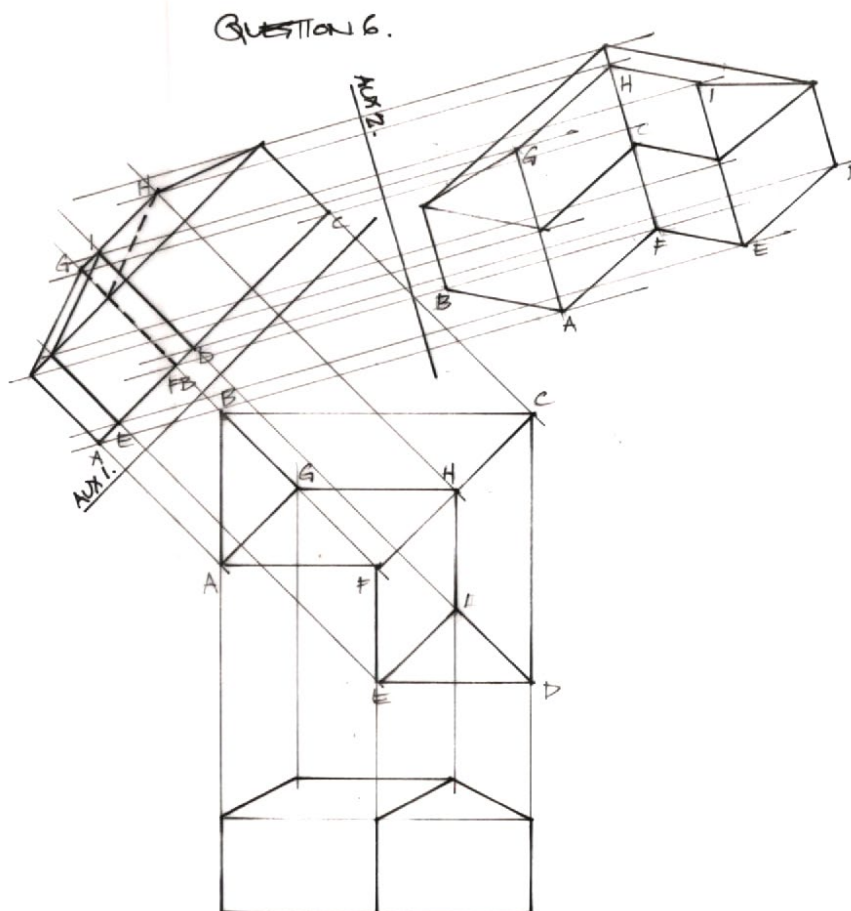
QUESTION 4.



QUESTION 5



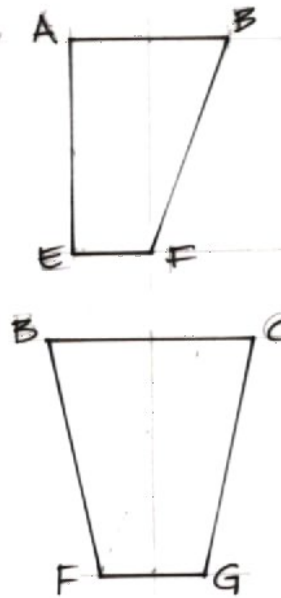
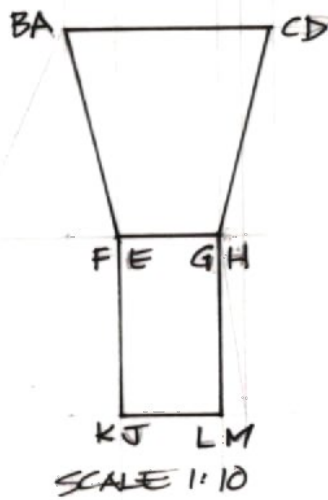
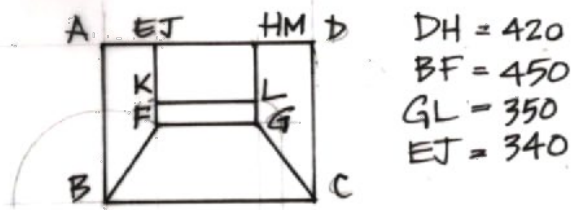
QUESTION 6





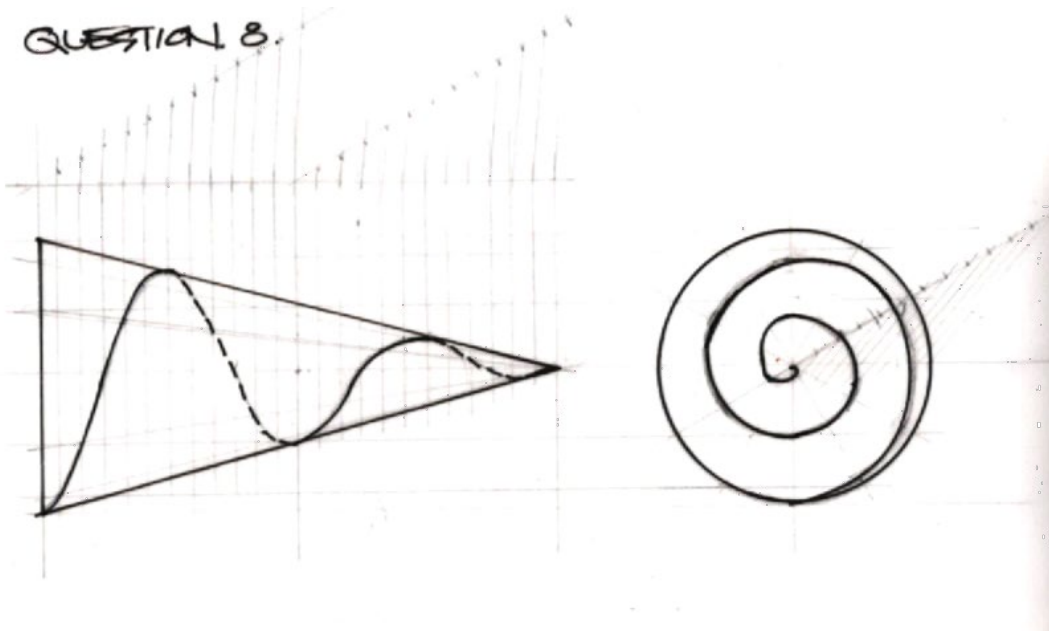
QUESTION 7

QUESTION 7.

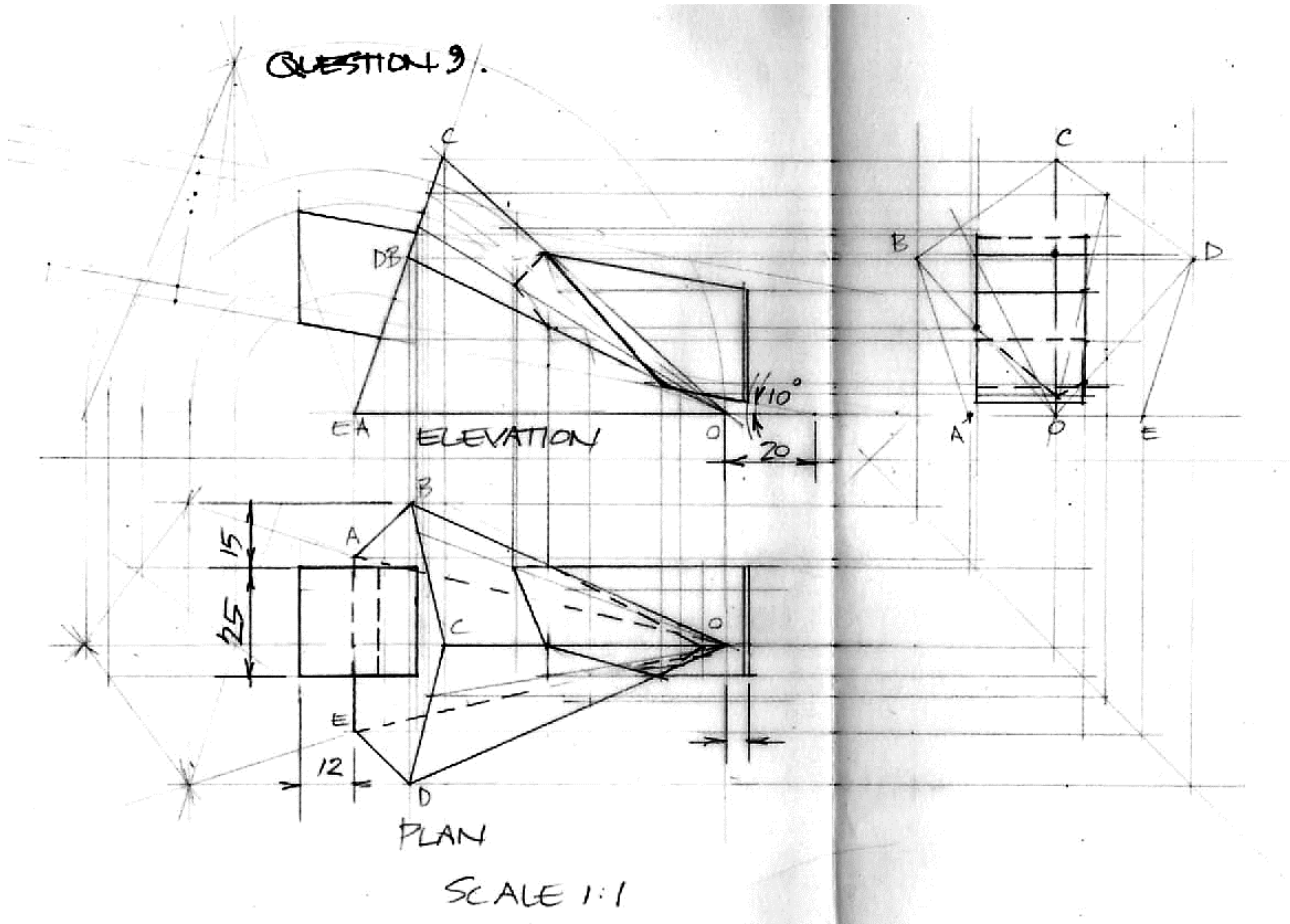


QUESTIONS 8

QUESTION 8.



QUESTION 9



QUESTION 10

