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Section.

Engineering 28
Fall Semester 1997
Midterm Examination #2, Written Part

Time Limit: 50 minutes
Closed book exam.
34 points possible on this part.

Written score / 34 CAD score/66

TOTAL EXAM SCORE _____

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READ THESE INSTRUCTIONS!

Write your name at the top of every page, or you will lose 1 point per page for this part of the examination.

This part of the examination is True/False. For each statement below, circle T if the statement is always true, *F if the statement is always or sometimes false. If F is circled, a brief explanation or counterexample must be provided in the space immediately below the statement, or no credit will be given.*

For statements which refer to a drawing, there is no need for a great deal of precision. Lines that appear parallel were drawn to appear parallel, those which appear perpendicular were drawn to appear perpendicular, etc.

Each correct answer is worth 1 point. There is a penalty for guessing: -1/2 point will be assessed for each incorrect answer.

Circle True or False. Provide a brief explanation or counterexample for each false statement.

T F 1. Skew lines can never appear to be parallel.

T F 2. Two non-intersecting lines can never determine a plane.

T F 3. Two perpendicular lines determine a plane.

T F 4. Any viewplane parallel to a line reveals the true length of the line.

T F 5. Any viewplane adjacent to the point view of a line reveals the true length of the line.

T F 6. Perpendicular lines will always appear to be perpendicular.

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T F 7. The true length of a line is always equal to or shorter than its projected length.

T F 8. The true angle between two lines is always equal to or smaller than its projected angle.

T F 9. The dihedral angle between two intersecting planes can be seen when the intersection line between the planes is shown in point view.

T F 10. If a line and a plane intersect at a point, the intersection point on the line can be seen when the plane is seen in edge view.

T F 11. If a line and a plane intersect at a point, the true angle of intersection can be seen when the line and any edge of the plane are both seen in true length.

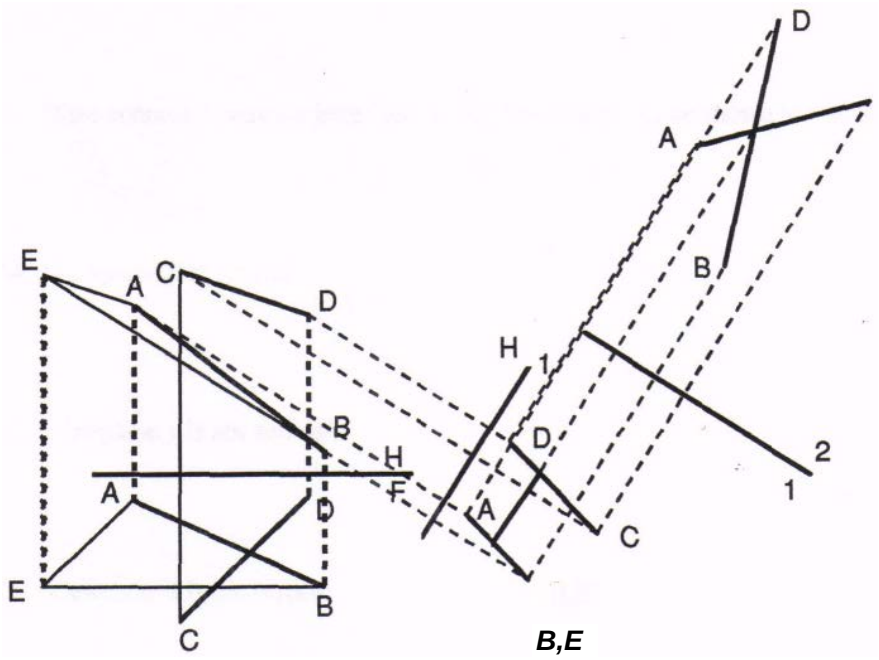
T F 12. If a line and a plane intersect at a point, the true angle of intersection can be seen when the line is in true length and any line in the plane is seen in point view.

T F 13. Any view of a plane will always contain at least one line (in the plane) that is in point view.

T F 14. Any view of a plane will always contain at least one line (in the plane) that is in true length.

T F 15. The cutting plane method cannot be used to find a virtual intersection between a line and a plane.

*Statements 16 - 20 refer to the lines AB and CD shown **in** the figure below. Viewplane H is horizontal.*



B,E

T F 16. Lines EA and CD are skew lines

T F 17. Lines AB and CD are skew lines.

T F 18. Viewplane 1 shows the shortest overall connector between lines AB and CD.

T F 19. Plane EAB is parallel to line CD.

T F 20. Lines AB and CD are shown in true length in viewplane 2.

T F 21. The connector between the lines is shown in true length in viewplane 1.

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T F 22. If the connector were projected into viewplane H, it would be shown in true length.

T F 23. If the connector were projected into viewplane F, it would be shown in true length.

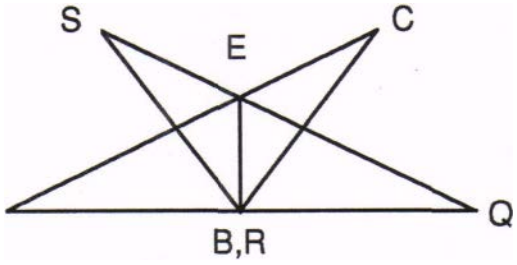
T F 24. Viewplane F is vertical.

T F 25. Viewplane 1 is not vertical.

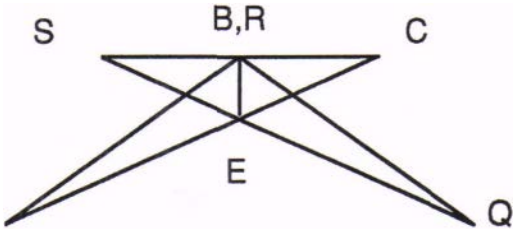
T F 26. Viewplane 2 is not vertical.

T F 27. Viewplane 2 is not perpendicular to viewplane H.

Statement 28-34 refer to planes ABC and QRS shown in the figure below.



H



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T F 28. Line EB (or ER), is the intersection between planes ABC and QRS

T F 29. Line AC is shown with correct visibility in viewplane H.

T F 30. Line BC is shown with correct visibility in viewplane H.

T F 31. Line QR is shown with correct visibility in viewplane F.

T F 32. Line QS shown with correct visibility in viewplane F.

T F 33. Points B,R,S,E, and Care coplanar.

T F 34. The line EB is perpendicular to the plane formed by points A, C, S, and Q.