Name Solutions

Statements 1-13. If F (*false*) is circled, a brief explanation or counter-example must be provided in the space immediately below the statement, or no credit will be given.

T (F) 1. Three points always determine a unique unbounded plane.
could be coincident or colinear

(T) F 2. Two non-coincident points always determine a unique line.

T (F) 3. Two non-coincident, unbounded planes always intersect in a straight line.
could be parallel

T (F) 4. Spheres, tetrahedrons, and cylinders are all developable surfaces.
spheres are not

T (F) 5. To put a plane into true shape, it suffices to put any line on the plane into edge view.
lines are always in edge view if not in point view, regardless of whether plane in true shape

T (F) 6. Two lines always determine a unique plane.
could be skew

T (F) 7. For any two lines, we can always find a single plane containing both.
could be skew

(T) F 8. For any two lines, we can always find a single view with both lines in true length.

T (F) 9. In the cutting plane method, the cutting plane is constructed to contain both the line and the plane whose intersection we wish to determine.
Doesn't contain plane

T (F) 10. In the cutting plane method, the cutting plane appears in edge view in both views.
only in one

(T) F 11. The rotation method is a technique used to find the true length of a line.

(T) F 12. The minimum distance between two non-intersecting lines can be seen in a view where either line is shown in point view.

T (F) 13. The minimum distance between two non-intersecting lines can be seen in a view where the lines appear to be parallel to each other
Two parallel lines will be parallel (but at different distances) in all views

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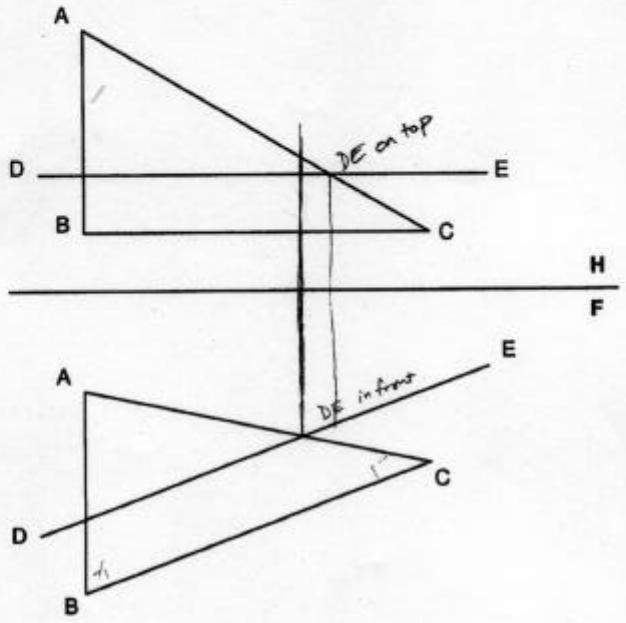
Statements 14-21 refer to the line and plane below. For this section, you must once again write an explanation if you select "false" as your answer.



(T) F 14. **Line BC is in true length in the F view.**

T (F) 15. **Plane ABC and line DE intersect somewhere off the bounded plane.**
DE & BC are || in both views
⇒ DE & ABC are || & never intersect

(T) F 16. **The visibility of line DE is correct in both the F and the H views.**

(T) F 17. **The true length of line AB can be found using the rotation method.**

T (F) 18. **Plane ABC is in true shape in the F view.**
only BC, not AB & AC, are in T.L.

T (F) 19. **Plane ABC is a right triangle.**
In view H, ~~Sa~~ see that ∠ ABC & ∠ BCA not 90° (BC is in T.L.)
Must do a construction to find if ∠ BAC is 90°

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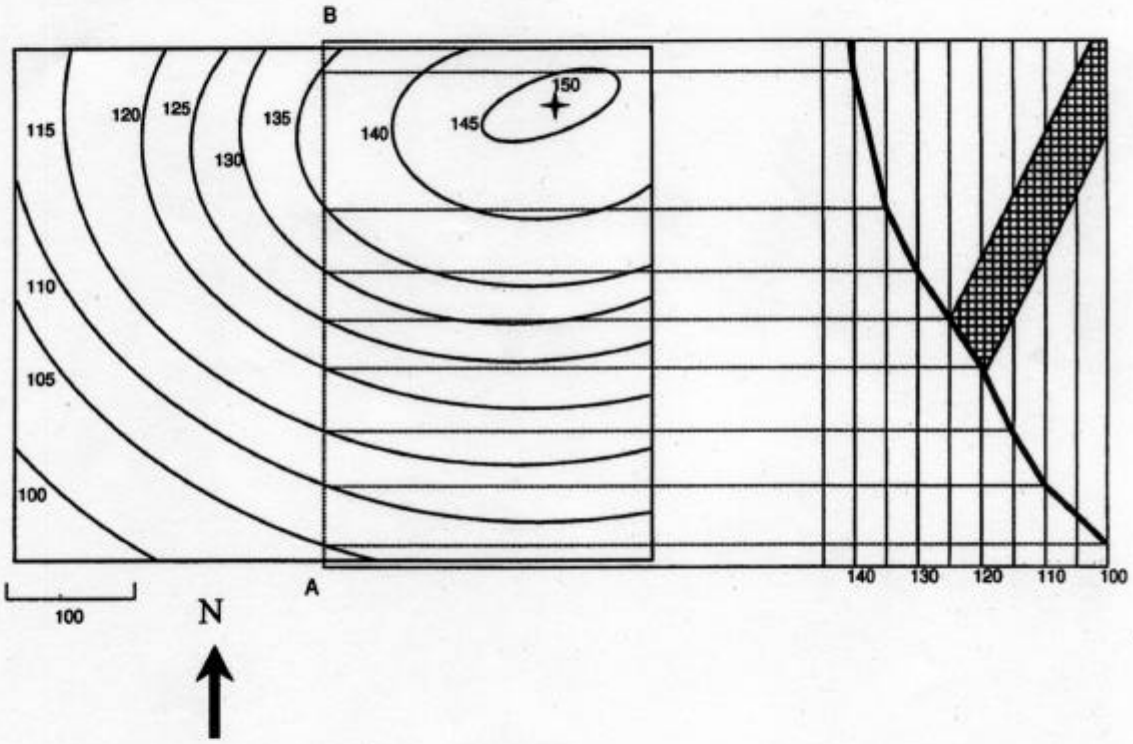
(T) F 20. A view which shows line AB in point view would show plane ABC in edge view.

(T) F 21. A view which shows line DE in point view would show plane ABC in edge view.

Statements 22-28 refer to the contour plot and land profile below. Note the direction of "North" and the horizontal scale used for the contour plot. The cross-hatched area on the profile plot represents a vein of coal, seen in edge view. For this section, you must once again write an explanation if you select "false" as your answer. All measurements are in meters



T (F) 22. As you walk from A to B, you would be going uphill the entire time.
After crossing 135 twice, goes downhill

T (F) 23. The profile of the land from A to B is correctly shown.
First & last points are incorrect

T (F) 24. The strike of the coal vein is Due South.
Strike is W or E - dip is N/S

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(T) F 25. The direction of maximum fall of the coal vein is Due North.

T (F) 26. The thickness of the coal vein is approximately 5 m.
closer to 10

T (F) 27. The dip of the coal vein is approximately 30°.
horizontal & vertical scale differ

(T) F 28. As you walk from A to B, you would see the bottom of the coal vein at approximately 120 m in elevation, and the top of the vein at approximately 125 m in elevation.

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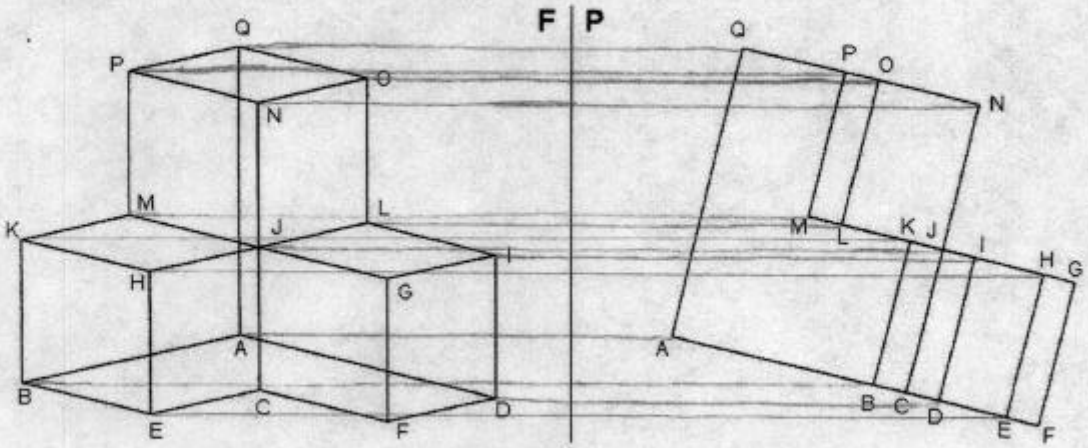
Statements 29-40 refer to the solid object below. No explanation or counter-example required for false statements in this section.



(T) F 29. The visibility of line AQ in viewplane F is correct.

T (F) 30. The visibility of line NP in viewplane F is correct.

T (F) 31. The visibility of line JM in viewplane F is correct.

T (F) 32. The visibility of line EH in viewplane F is correct.

(T) F 33. The visibility of line AB in viewplane F is correct.

(T) F 34. The visibility of line AD in viewplane F is correct.

T (F) 35. The visibility of line MP in viewplane P is correct.

(T) F 36. The visibility of line LO in viewplane P is correct.

T (F) 37. The visibility of line BK in viewplane P is correct.

T (F) 38. The visibility of line CJ in viewplane P is correct.

(T) F 39. The visibility of line DI in viewplane P is correct.

T (F) 40. The visibility of line EH in viewplane P is correct.