TB(3A) Ch. 5 More about 3-D Figures

Conventional Questions

1. [13-14 Standardized Test 2 #1]

Draw the orthographic views for the solid shown in **Figure 1** on the grid paper provided.

(3 marks)

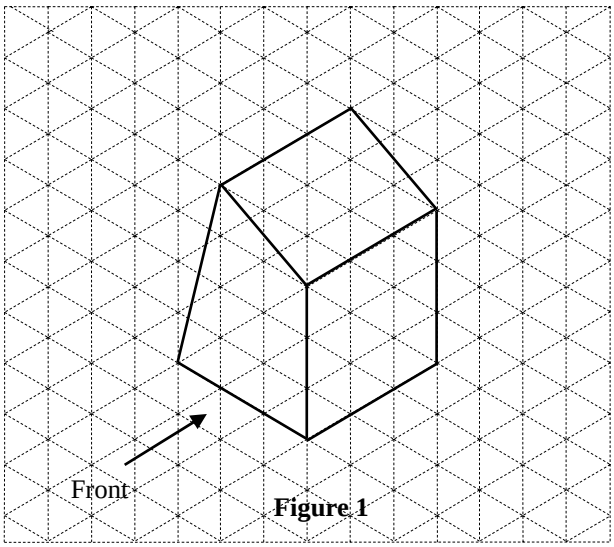
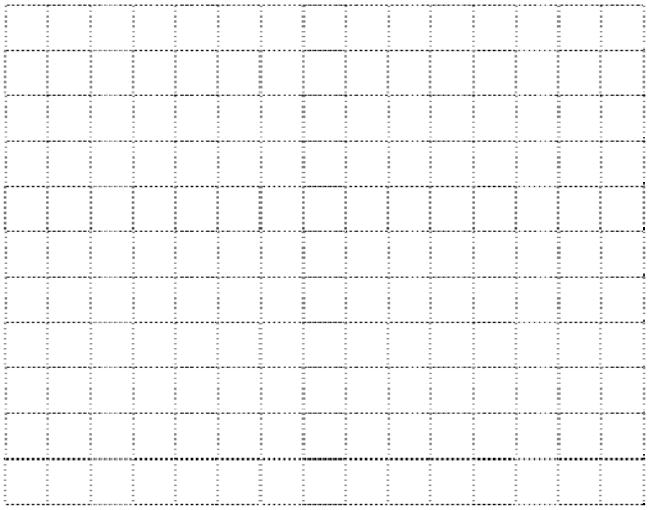


Figure 1



2. [13-14 Standardized Test 2 #4]

Figure 4 shows a regular hexagonal prism *ABCDEFGHIJKL*.

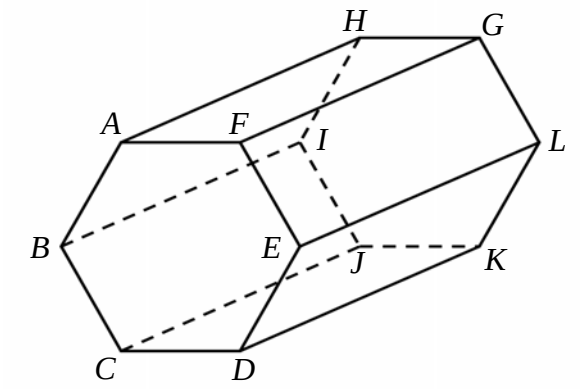


Figure 4

(a) Name the projection of *A* on plane *GHIJKL*.

(b) Name the angle between line *AD* and plane *CDKJ*.

(c) Name the angle between plane *ADKH* and plane *CDKJ*.

(d) Name the angle between plane ABCDEF and plane CDKJ.

3. [13-14 Final Exam #4]

(a) **Figure 2(a)** shows the orthographic views of a solid. Draw the corresponding solid on the isometric grid provided. **(2 marks)**

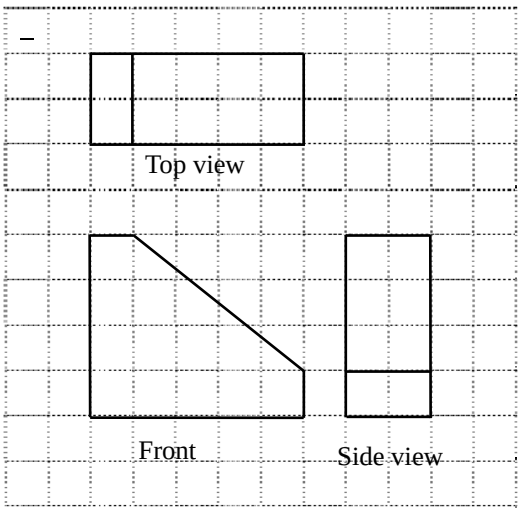
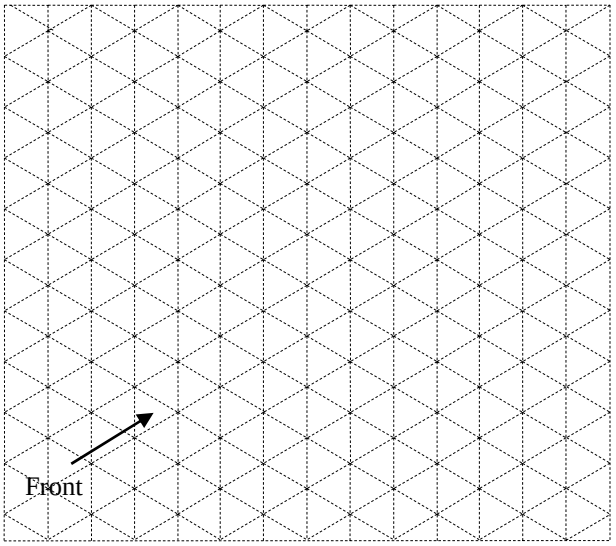
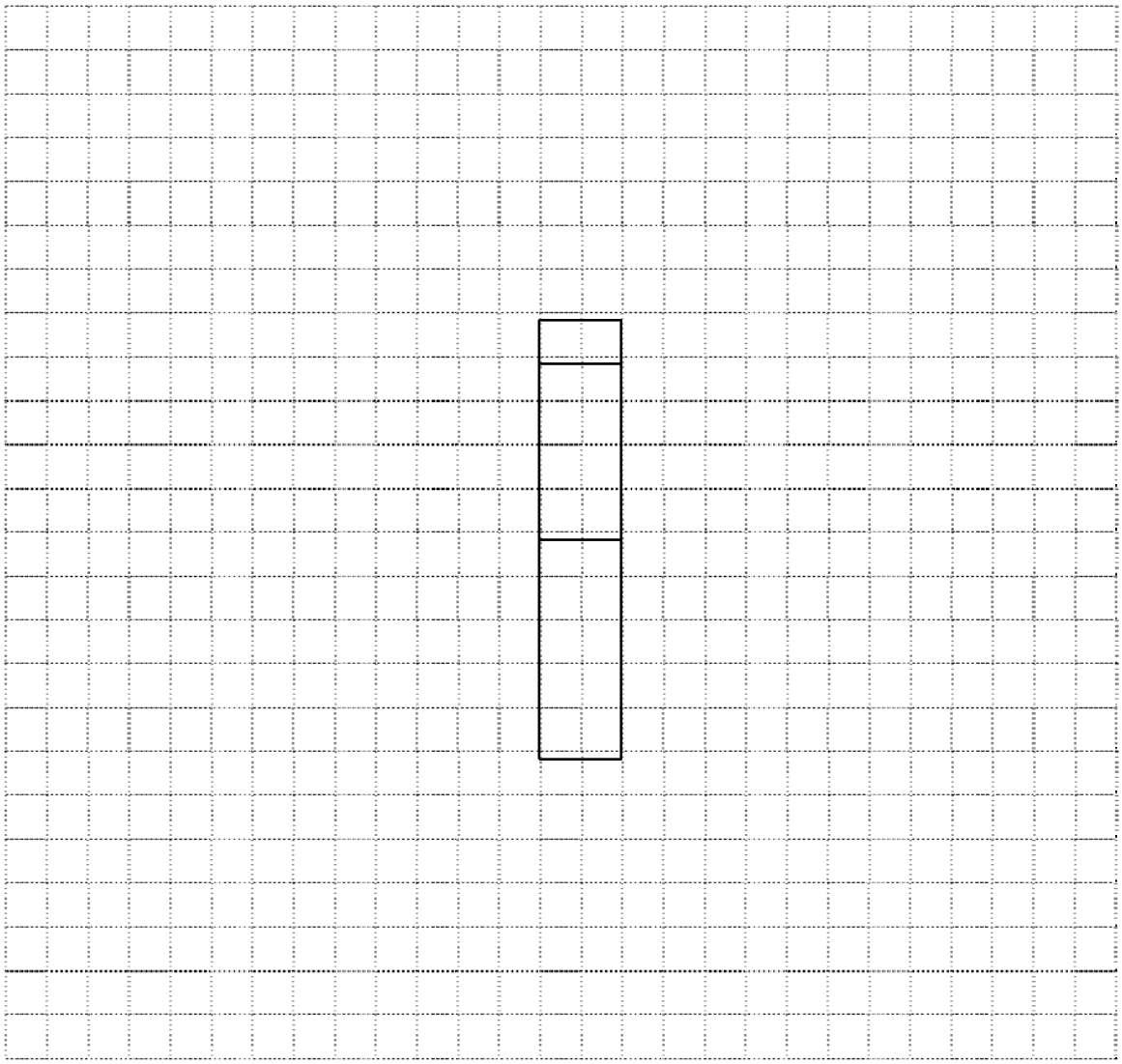


Figure 2(a)

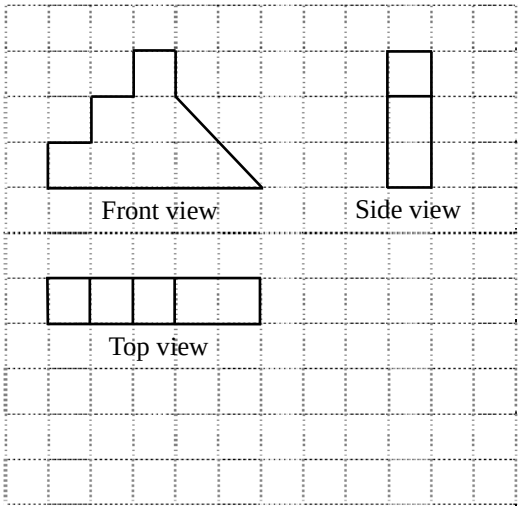


(b) **Figure 2(b)** is an incomplete net drawn for the solid in part **(a)**. Complete the net. **(2 marks)**



4. [14-15 Standardized Test #4]

Figure 1(a) shows the orthographic views of a solid. Draw the corresponding solid on the isometric grid provided. **(2 marks)**



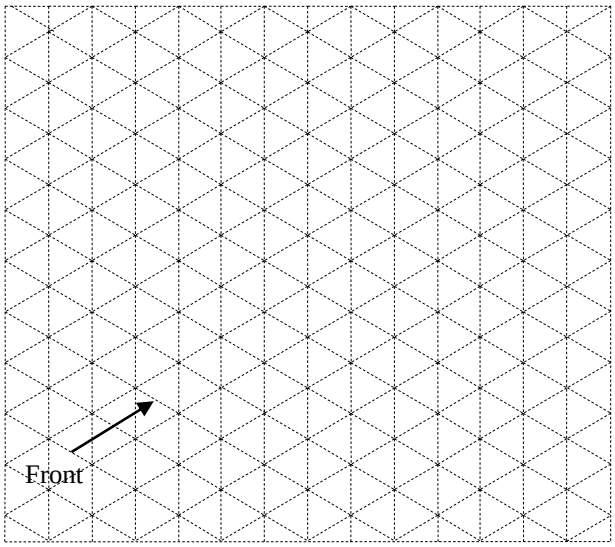


Figure 1(a)

5. [14-15 Standardized Test #5]

Figure 2(a) shows a net formed by 6 identical squares. Peter is going to move square *D* to another position such that the net can form a cube.

(a) Draw face *D* in **Figure 2(b)**. **(1 mark)**

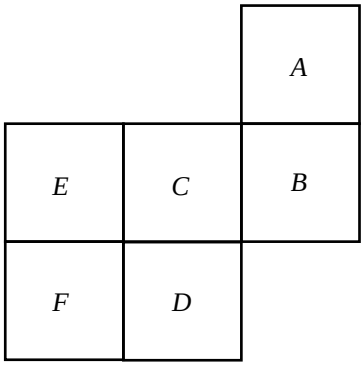


Figure 2(a)

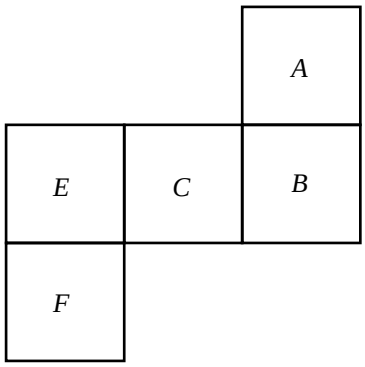


Figure 2(b)

(b) Hence name the letter on the cube which is opposite to face *D*. **(1 mark)**

Face _____ is opposite to face *D*.

6. [14-15 Final Exam #4]

Figure 2 shows a solid which is made by 10 identical cubes. Draw the orthographic views of the solid on the grid paper provided.

(3 marks)

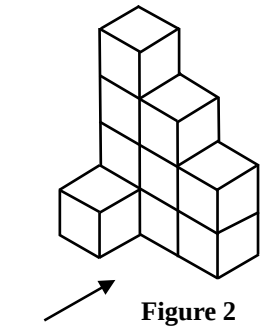
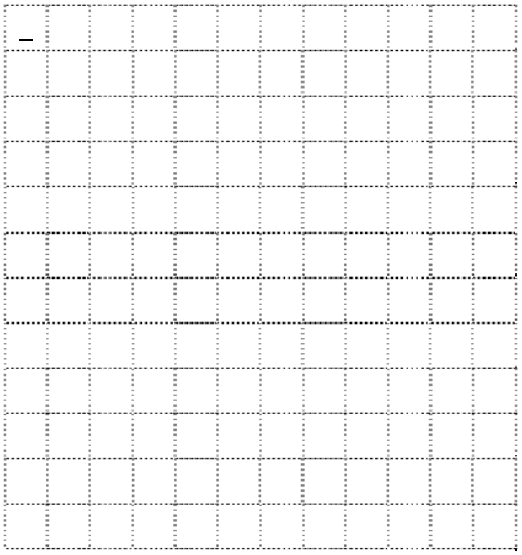


Figure 2



7. [15-16 Standardized Test #1]

Figure 1 shows a right triangular prism *ABCDEF*. It is given that ΔABF and ΔDCE are isosceles right-angled triangles.

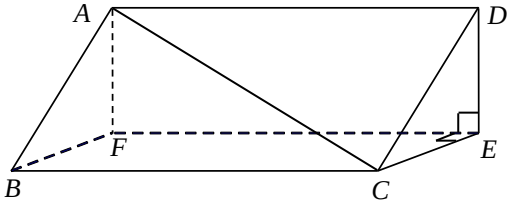


Figure 1

(a) Name the projection of line *AC* on plane *BCEF*. _____ **(0.5 mark)**

(b) Name the projection of line *AC* on plane *ADEF*. _____ **(0.5 mark)**

(c) Name the angle between line *AC* and plane *BCEF*. _____ **(0.5 mark)**

(d) Name the line segment representing the shortest distance from *D* to *BC*. ____ **(0.5 mark)**

(e) Find the angle between planes *BCEF* and *ADEF*. _____ **(0.5 mark)**

(f) Find the angle between planes *ABCD* and *ADEF*. _____ **(0.5 mark)**

8. [15-16 Standardized Test #3]

Figure 2 shows the orthographic views of a solid. Draw the corresponding solid on the isometric grid provided. **(2 marks)**

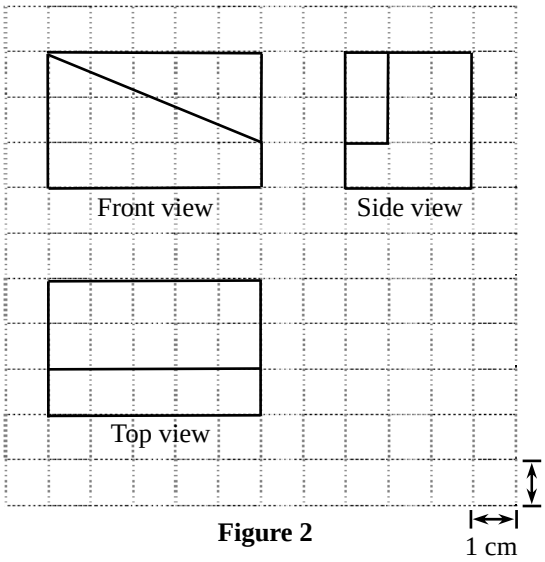
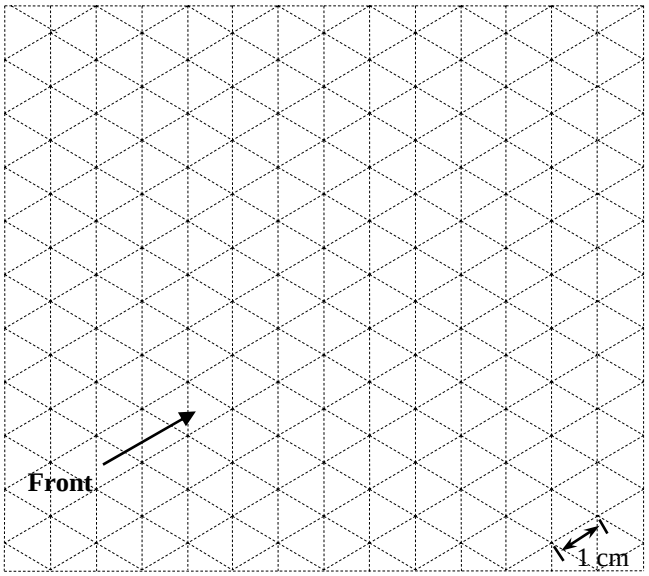


Figure 2



9. [15-16 Final Exam #9]

Draw the orthographic views for the solid shown in **Figure 3** on the grid paper provided. **(3 marks)**

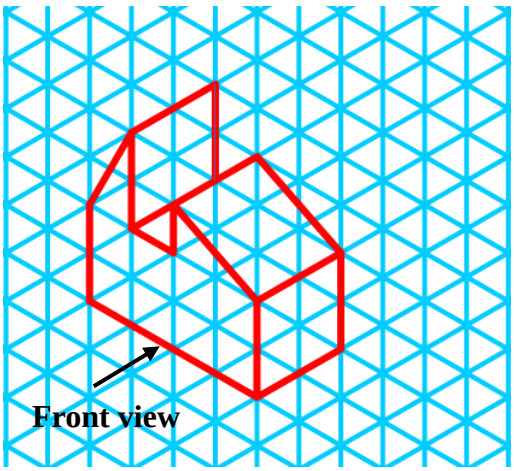
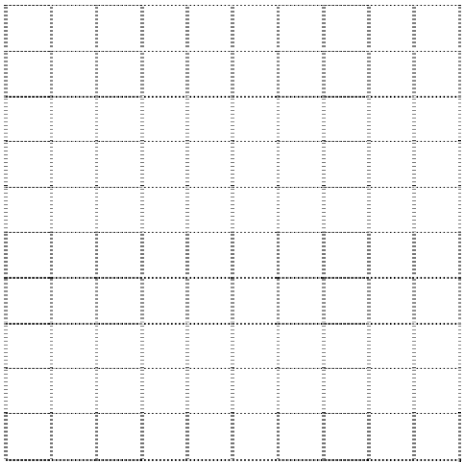


Figure 3



10. [15-16 Final Exam #10]

Figure 4 shows a cuboid *ABCDEFGH* with different length, width and height.

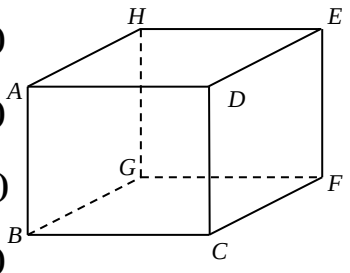


Figure 4

(a) Name the projection of *GD* on plane *CDEF*. **(0.5 mark)**

_____

(b) Name the angle between planes *BGED* and *BCFG*. **(0.5 mark)**

_____

(c) Write down the number of planes of reflection of the cuboid. **(0.5 mark)**

_____

(d) Write down the number of axes of symmetry of the cuboid. **(0.5 mark)**

_____

11. [16-17 Final Exam #2]

Figure 1 shows the orthographic projection of a solid, draw the solid by using the isometric grid provided below. **(2 marks)**

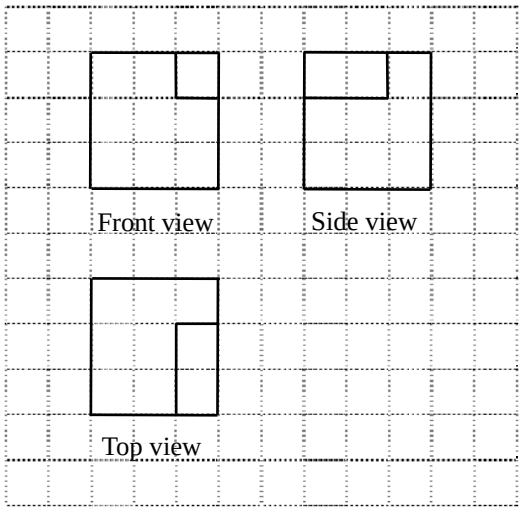
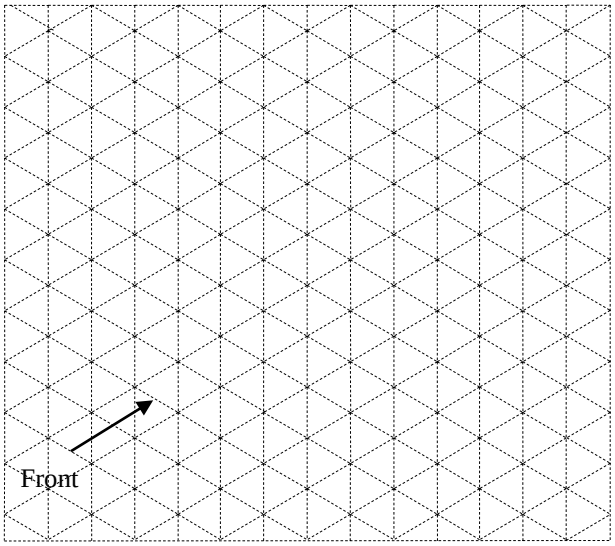


Figure 1



12. [16-17 Final Exam #3]

Figure 2 shows a right pyramid *VABCD* with a square base *ABCD*. It is given that *G* is the projection of *V* on plane *ABCD* and *H* is the mid-point of *BC*.

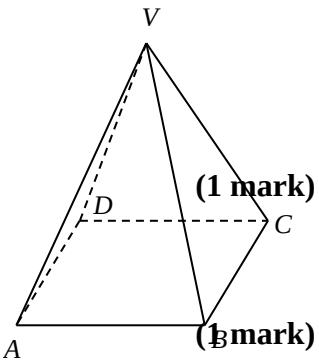


Figure 2

(a) It is known that *VABCD* has one axis of rotational symmetry. What is the order of it? **(1 mark)**

_____

(b) Name the angle between the line *VB* and the base *ABCD*. **(1 mark)**

_____

(c) Name the angle between the plane *VBC* and the base *ABCD*. **(1 mark)**

_____

13. [17-18 Standardized Test 2 #1]

Figure 1 shows a cube *ABCDEFGH*.

(a) Name the angle between line *EA* and plane *ABCD*.

_____ **(0.5 mark)**

(b) Name the angle between line *EC* and plane *BCHG*.

_____ **(0.5 mark)**

(c) Find the order of rotational symmetry of the cube with *EB* as the axis of rotation.

_____ **(0.5 mark)**

(d) Find $\angle AEC$.

_____ **(0.5 mark)**

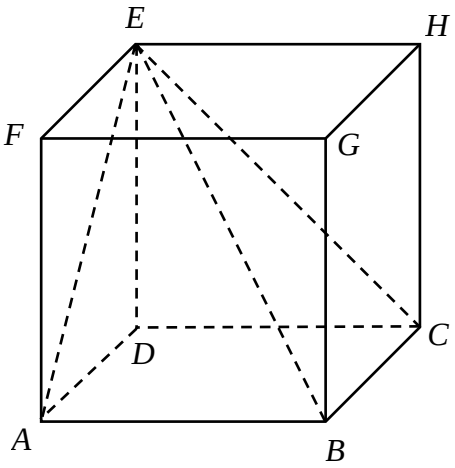
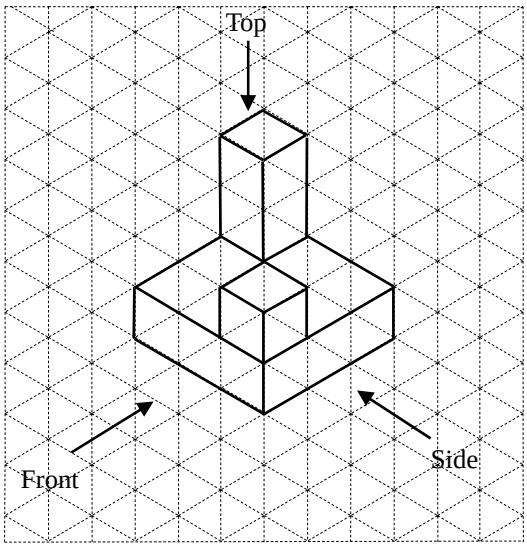
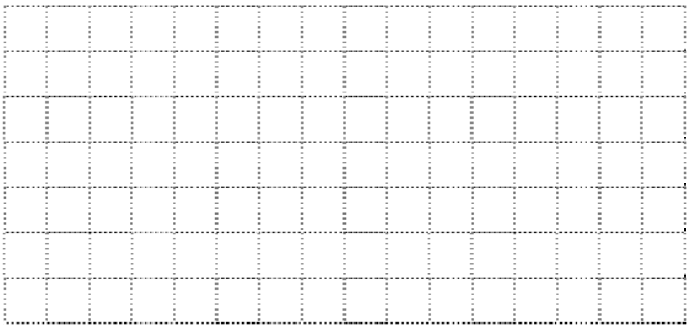


Figure 1

14. [17-18 Final Exam #3]

Assuming that there are no hidden parts in the solid shown in **Figure 1**, draw its orthographic views on the grid paper provided. **(3 marks)**





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