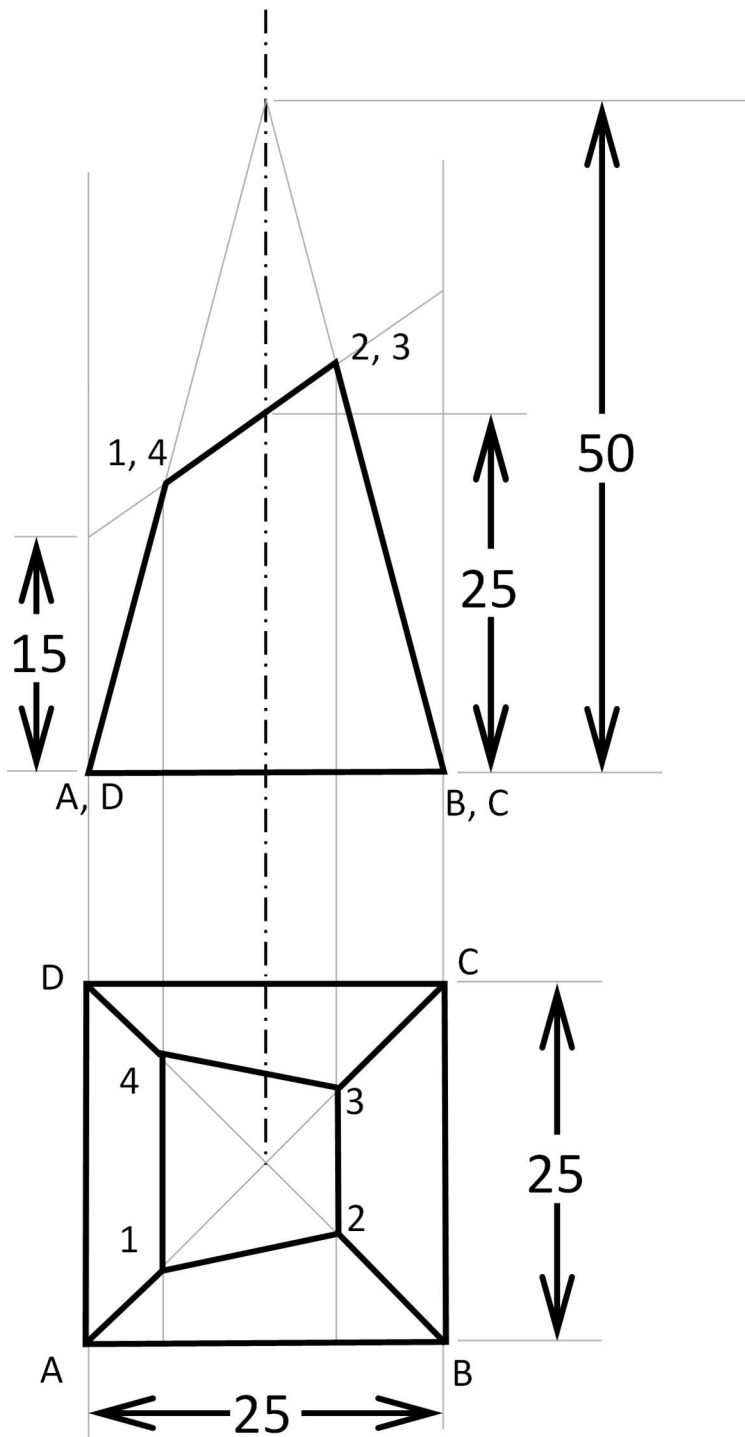
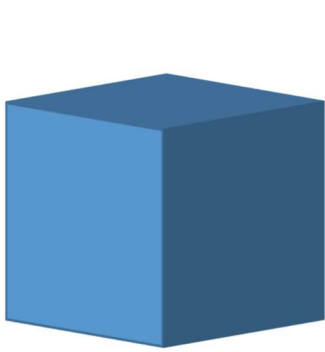


Problem 1) Orthographic projections (first angle projection) of a curtailed pyramid are given below. Draw its isometric drawing. (12 points)



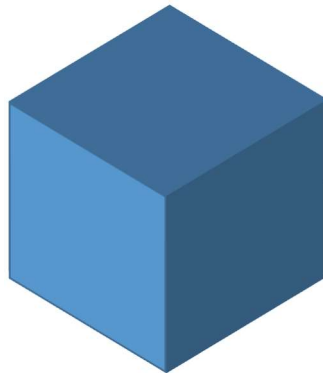
Problem 2) Please derive the value for the ratio of true size vs projection size in an isometric projection. What is the difference between isometric projections and isometric drawings? (5 points)

Problem 3) The following four views correspond to the same cube. Please match the drawings with the description. Explain your answers. (3 points)



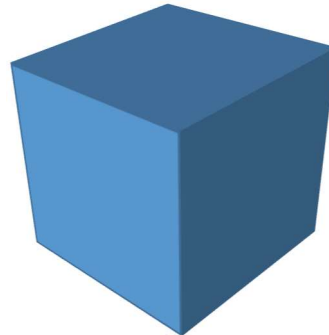
A

Isometric



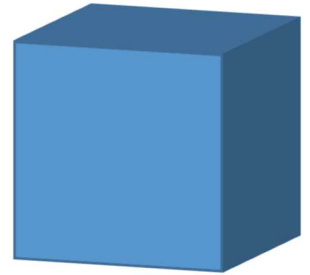
B

Dimetric



C

Trimetric



D

Perspective

Problem 4) Please select the right answer in the following five questions and explain your choice. (1 point each)

- I. All viewing lines merge at a point in _____.
 - (a) Orthographic projections
 - (b) Isometric projections
 - (c) Perspective projections
 - (d) Oblique projections
- II. Lengths of lines that are _____ appear in true length in the isometric projections.
 - (a) Parallel of the isometric axes
 - (b) Inclined at 45° to the isometric axes
 - (c) Inclined at 30° to the isometric axes
 - (d) None of the above
- III. The smallest possible rhombus encompassing a given ellipse will touch the ellipse at _____.
 - (a) its vertices
 - (b) mid points of its sides
 - (c) locations that depend on the ratio of the major and minor axis lengths of the ellipse
 - (d) None of the above
- IV. A square in an orthographic plane looks like a rhombus in the isometric projection. The ratio of the two diagonals of this rhombus is equal to _____.
 - (a) $1/\sqrt{2}$
 - (b) $\sqrt{3}/2$
 - (c) $1/\sqrt{3}$
 - (d) None of the above

- V. A line that is drawn in its true length in all three orthographic projections will _____.
(a) be drawn in its true length in the isometric drawing
(b) be elongated in the isometric drawing
(c) be shortened in the isometric drawing
(d) None of the above