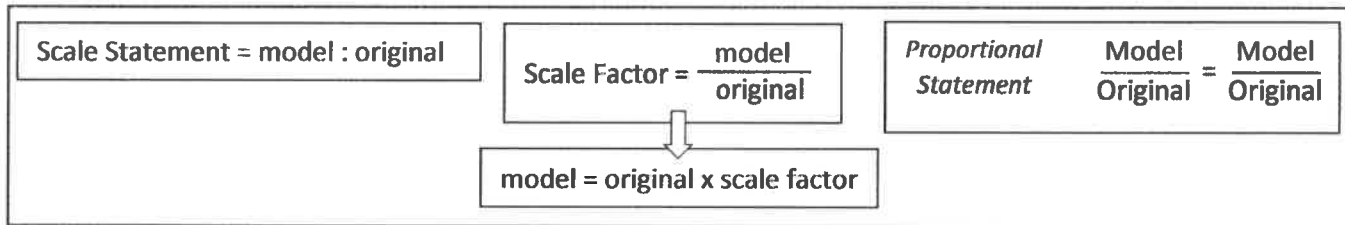


Chapter 5 Test Preparation Assignment

Units 5.1 – 53
(Show ALL Work)



1. The distance between Vancouver and Kelowna is approximately 270 km in a straight line. The distance on a map is 2.7 cm. What is the scale for the map?

OF IN METERS,

$$\begin{aligned} \text{SCALE STATEMENT} &= \text{model} : \text{ORIGINAL} \\ &= 2.7 \text{ cm} : 270 \text{ km} \\ &= 2.7 \text{ cm} \times \frac{1 \text{ m}}{100 \text{ cm}} : 270 \text{ km} \times \frac{1000 \text{ m}}{1 \text{ km}} \\ &= 0.027 \text{ m} : 270,000 \text{ m} \\ &= 1 : 10,000,000 \end{aligned}$$

2. On a house plan, $\frac{1}{4}$ " is equal to 1 ft. What is the actual length of a room that measures $2 \frac{1}{4}$ inches on the plan?

$$\begin{aligned} \text{model} &= \text{ORIGINAL} \times \text{SF} \\ 2 \frac{1}{4} \text{ ''} &= \text{ORIGINAL} \times \frac{1/4 \text{ ''}}{1 \text{ ft}} \\ \text{ORIGINAL} &= \frac{2 \frac{1}{4} \text{ ''}}{1/4 \text{ ''}} \\ &= 2 \frac{1}{4} \text{ ''} \times \frac{1 \text{ ft}}{1/4 \text{ ''}} = \frac{2 \frac{1}{4}}{1/4} = 2 \frac{1}{4} \times 4 = \underline{\underline{9 \text{ ft}}} \end{aligned}$$

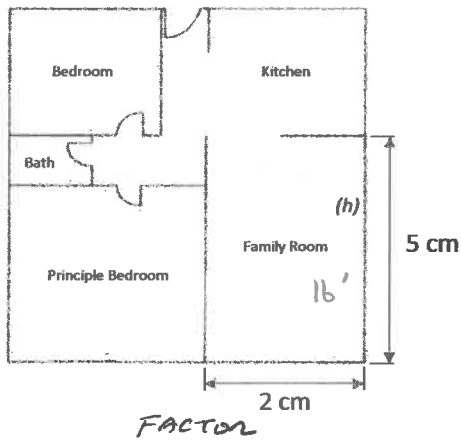
∴ THE ACTUAL LENGTH OF THIS ROOM IS 9 feet

3. In a picture a girl measures 1.9 cm. Her actual height is 1.9 meters. The girl is standing beside a tree that measures 8 cm in the picture. What is the actual height of the tree to the nearest tenth of a metre?

$$\begin{aligned} \frac{\text{model}}{\text{ORIGINAL}} &= \frac{\text{model}}{\text{ORIGINAL}} \\ \frac{1.9 \text{ cm}}{1.9 \text{ m}} &= \frac{8 \text{ cm}}{x} \\ 1.9x &= 1.9(8) \\ x &= \frac{15.2}{1.9} = \underline{\underline{8 \text{ m}}} \end{aligned}$$

∴ THE ACTUAL HEIGHT OF THIS TREE IS 8m

4. The diagram below shows a house floor plan. The indicated wall (h) in the Family Room is 16 feet long. The distances shown were measured off of the plan.



- a. What scale was used to draw the floor plan?

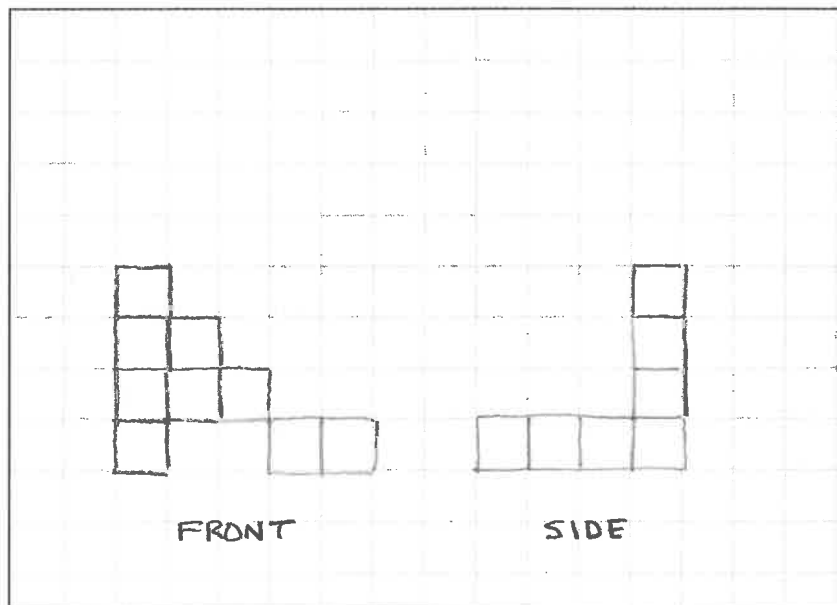
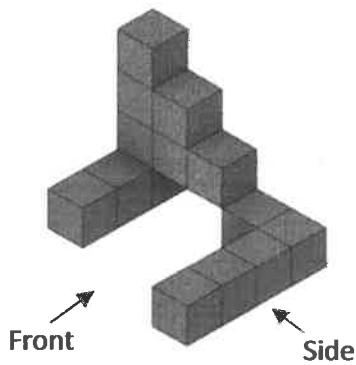
$$\begin{aligned} \text{SCALE FACTOR} &= \frac{\text{model}}{\text{ORIGINAL}} \\ &= \frac{5\text{cm}}{16\text{feet}} \end{aligned}$$

- b. What are the dimensions of the family room?

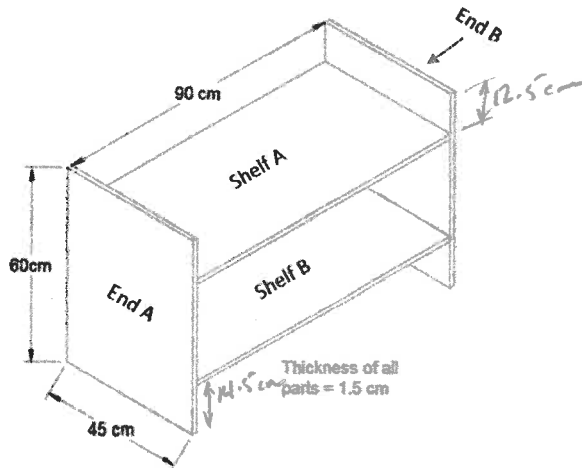
$$\begin{aligned} \text{model} &= \text{ORIGINAL} \times \text{SF} \\ 2\text{cm} &= \text{ORIGINAL} \times \frac{5\text{cm}}{16\text{ft}} \\ \text{ORIGINAL} &= \frac{2\text{cm}}{\frac{5\text{cm}}{16\text{ft}}} = 2 \times \frac{16}{5} = 6.4' = \underline{\underline{6'5''}} \end{aligned}$$

∴ THE DIMENSIONS OF THE FAMILY ROOM ARE 16' x 16'5''

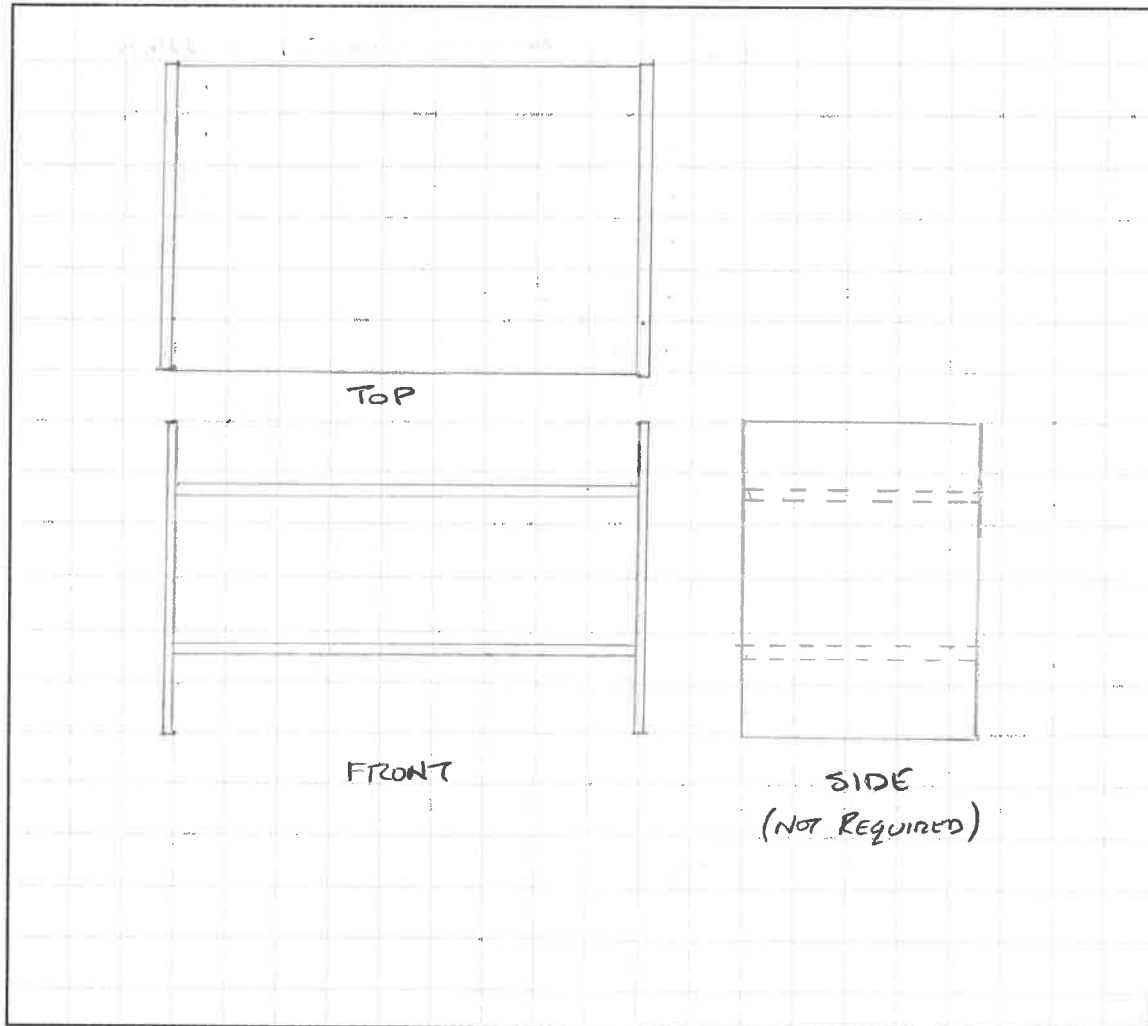
5. Sketch the front and side views of this set of blocks. Label each view.



6. The following diagram shows the design of a free-standing shelf/organizer. Using a suitable scale (note this on the drawing), Draw the front and top views of the organizer using the measurements provided.

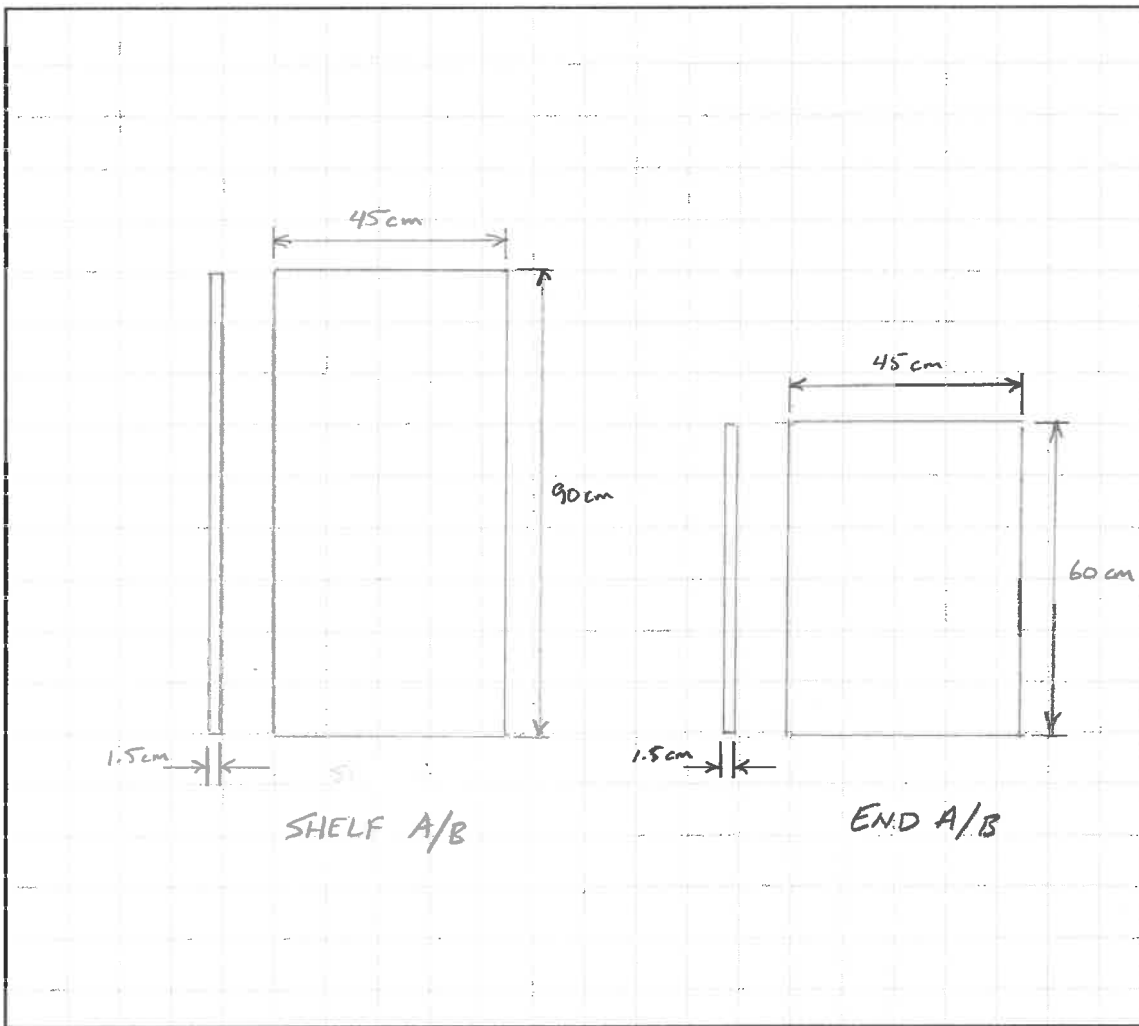
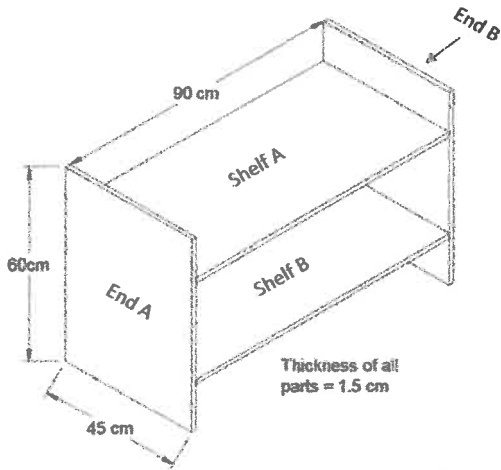


SCALE = 1 square = 10 cm



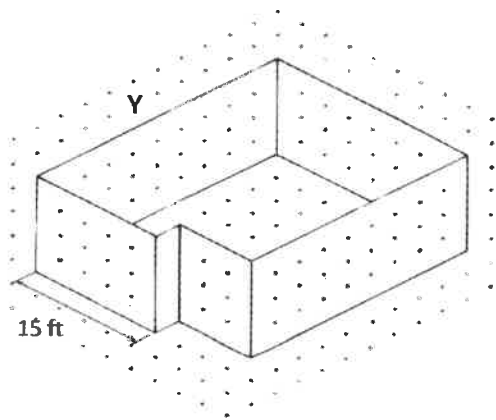
GRID = $\frac{1}{4}$ " x $\frac{1}{4}$ "

7. Draw the component parts (top & side views) of the free-standing shelf/organizer from the previous question. Label the parts and include the dimensions for each. (note the scale used on the drawing)



GRID = $\frac{1}{4}$ " x $\frac{1}{4}$ "

8. In the following isometric drawing of a room, a wall's length is 15 feet (as noted on drawing).



THE SCALE FACTOR

a. Write a scale statement for the drawing

$$\text{SCALE FACTOR} = \frac{\text{MODEL}}{\text{ORIGINAL}} = \frac{5}{15} = \frac{1 \text{ UNIT}}{3 \text{ FEET}}$$

a. Find the length of wall (Y) by using the scale statement

$$\text{MODEL} = \text{ORIGINAL} \times \text{SF}$$

$$9 = \text{ORIGINAL} \times \frac{1}{3}$$

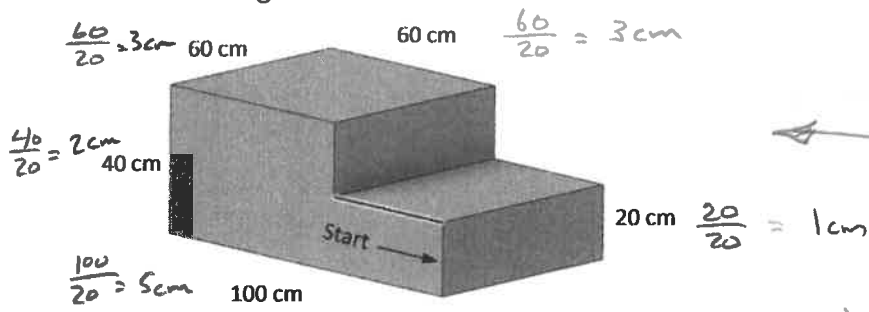
$$\text{ORIGINAL} = \frac{9}{\frac{1}{3}}$$

$$\text{ORIGINAL} = \frac{9}{1} \div \frac{1}{3}$$

$$\text{ORIGINAL} = \frac{9}{1} \times \frac{3}{1}$$

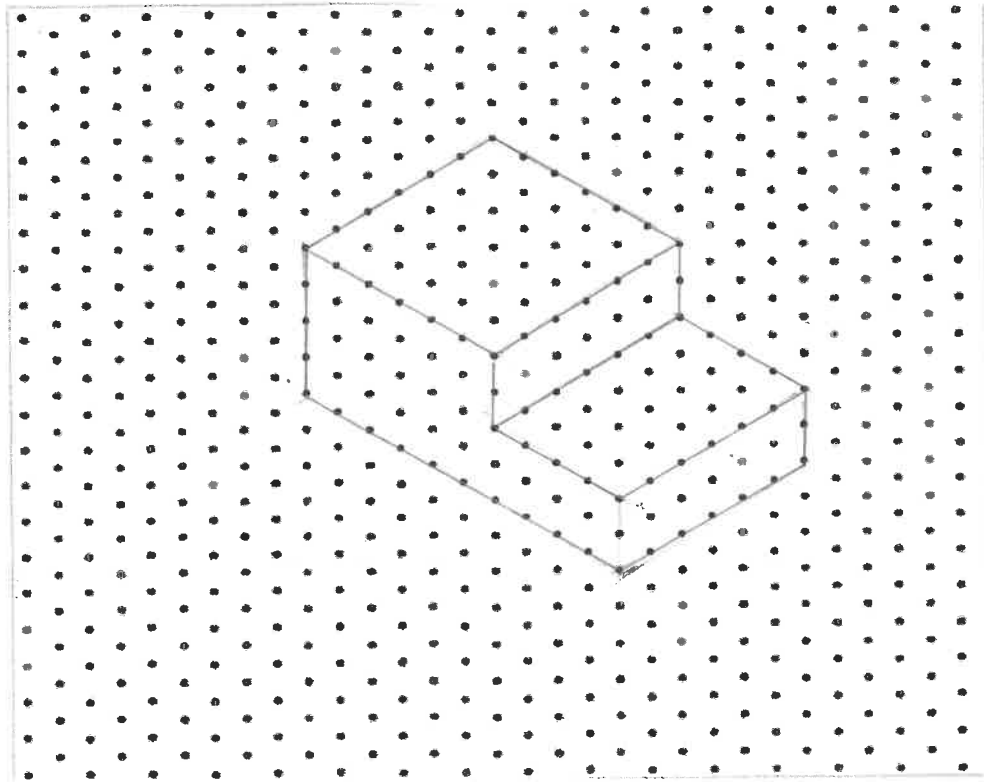
$$\text{ORIGINAL} = \underline{\underline{27 \text{ FEET}}}$$

9. Draw the shape below as an isometric drawing at a scale of 1:20. Use the indicated edge as your starting line.



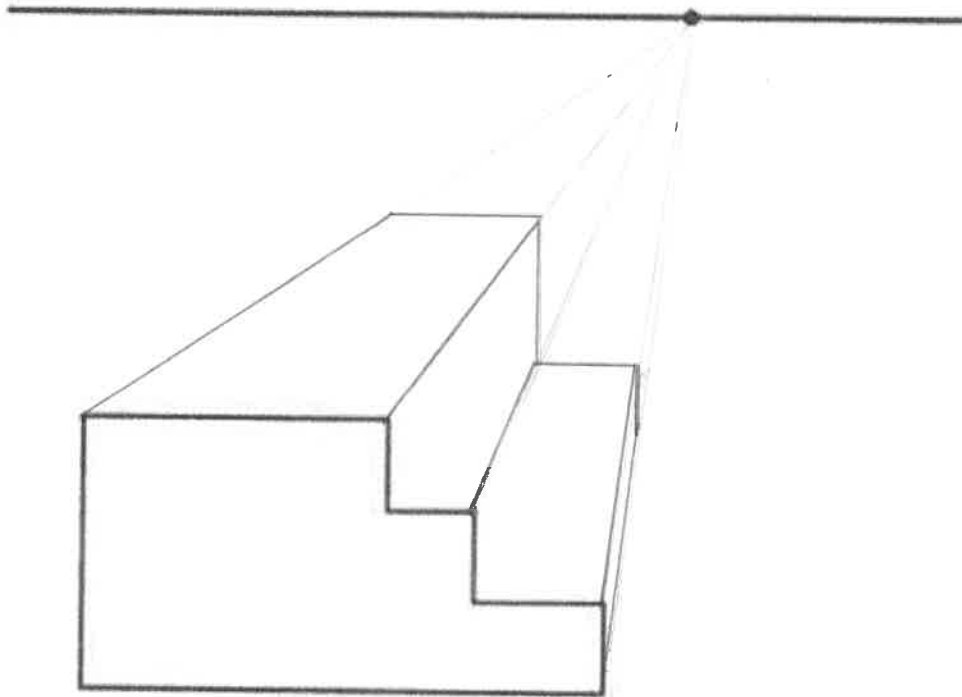
model = ORIGINAL \times SF
 model = ORIGINAL $(\frac{1}{20})$
 model = $\frac{\text{ORIGINAL}}{20}$

SCALE = 1:20 (1cm = 20mm)



GRID SIZE = 5mm x 5mm OR 0.5cm x 0.5cm

10. Create a single point perspective drawing of a staircase using the information below.

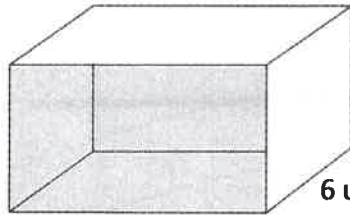


$$\text{model} = \text{ORIGINAL} \times SF$$

$$= \text{ORIGINAL} \times \frac{1}{1.5} = \frac{\text{ORIGINAL}}{1.5}$$

11. Create an exploded view drawing of this box (note the front face is open)

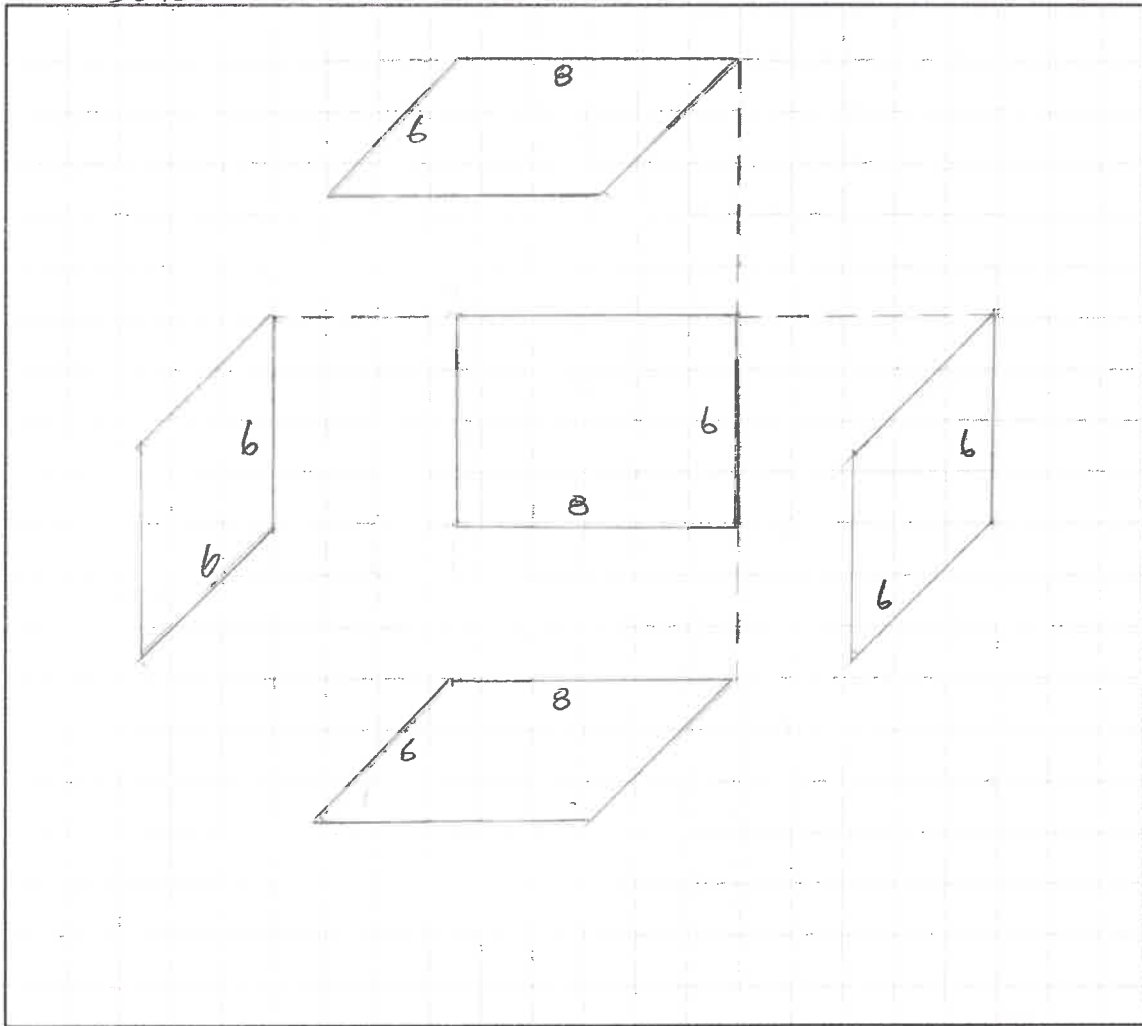
8 units $\frac{8}{1.5} = 5.3$ model UNITS



6 units $\frac{6}{1.5} = 4$ model UNITS

6 units $\frac{6}{1.5} = 4$ model UNITS

SCALE = 1 model UNITS : 1.5 ORIGINAL UNIT.



GRID = $\frac{1}{4}$ " \times $\frac{1}{4}$ "