

2.2

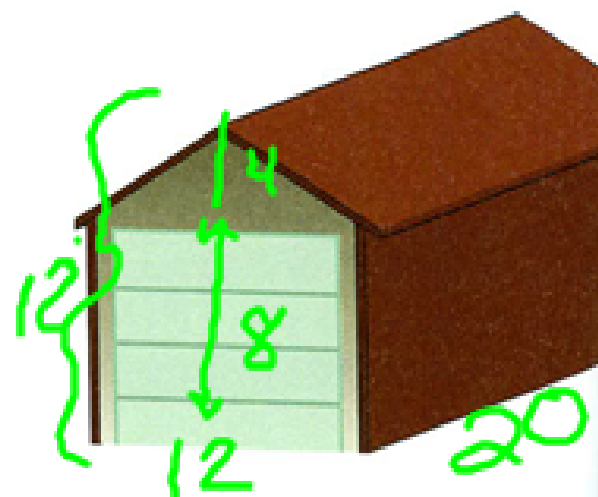
Representing Views of 3-D Objects

orthographic drawing

- a 2-D view of a 3-D object
- often includes a front view, a top view, and a side view of the object

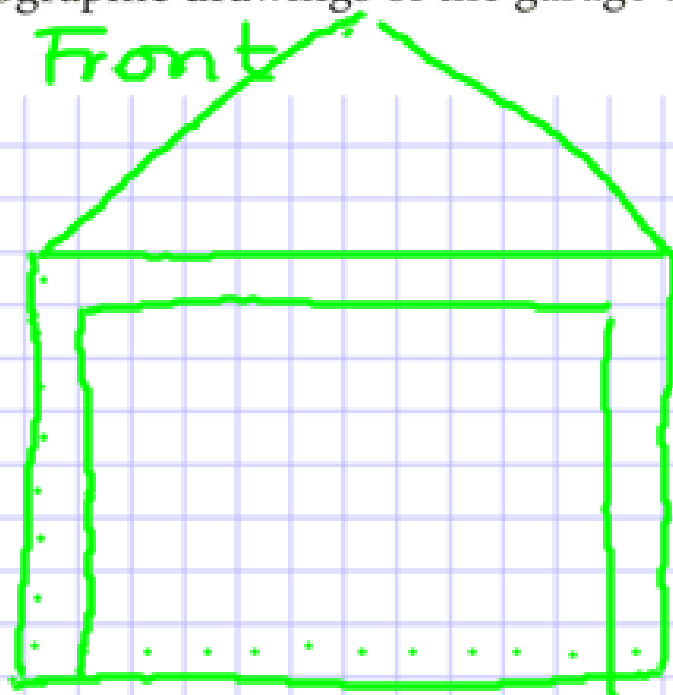
Work With Orthographic Drawings

Nicole's company is bidding on a job to design and build a garage. Part of Nicole's presentation will be a set of **orthographic drawings** of what the garage will look like after it is built. The dimensions of the garage will be approximately 20 feet long, 12 feet wide, and 12 feet high.

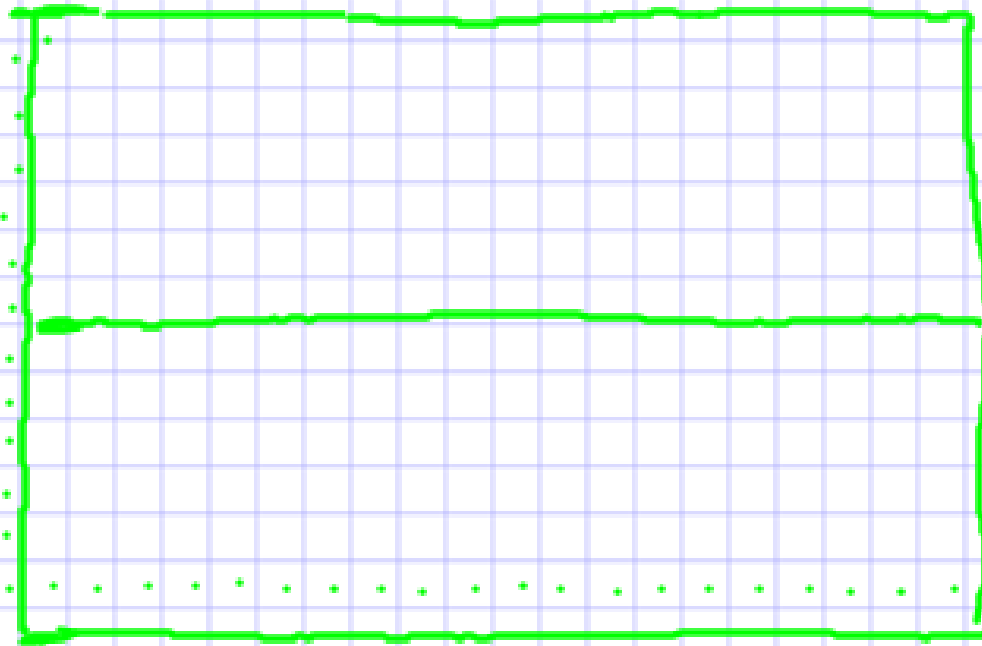


1/2'
overhang

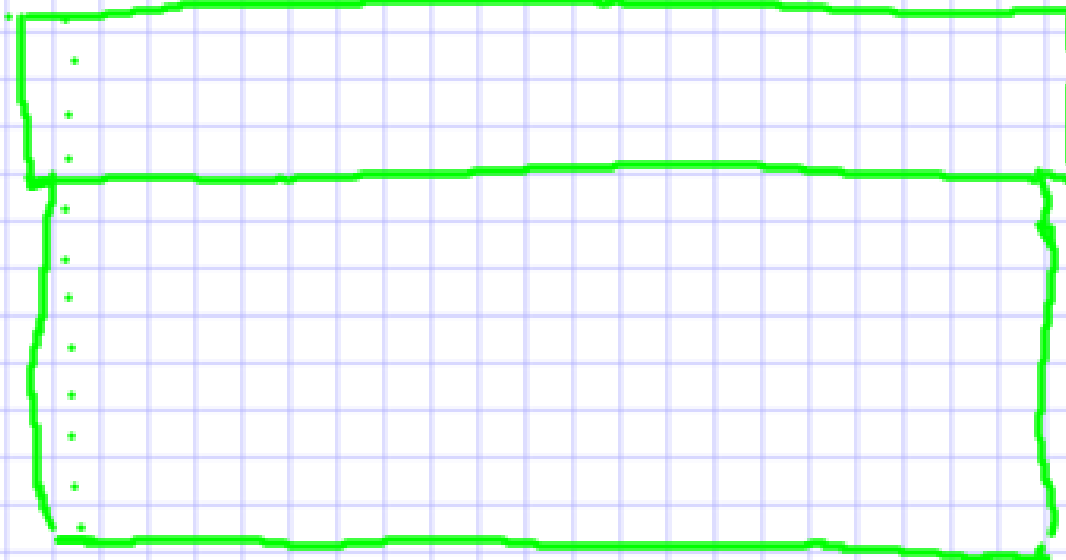
Create orthographic drawings of the garage using a scale of 1 square to 1 foot.



Top



Side

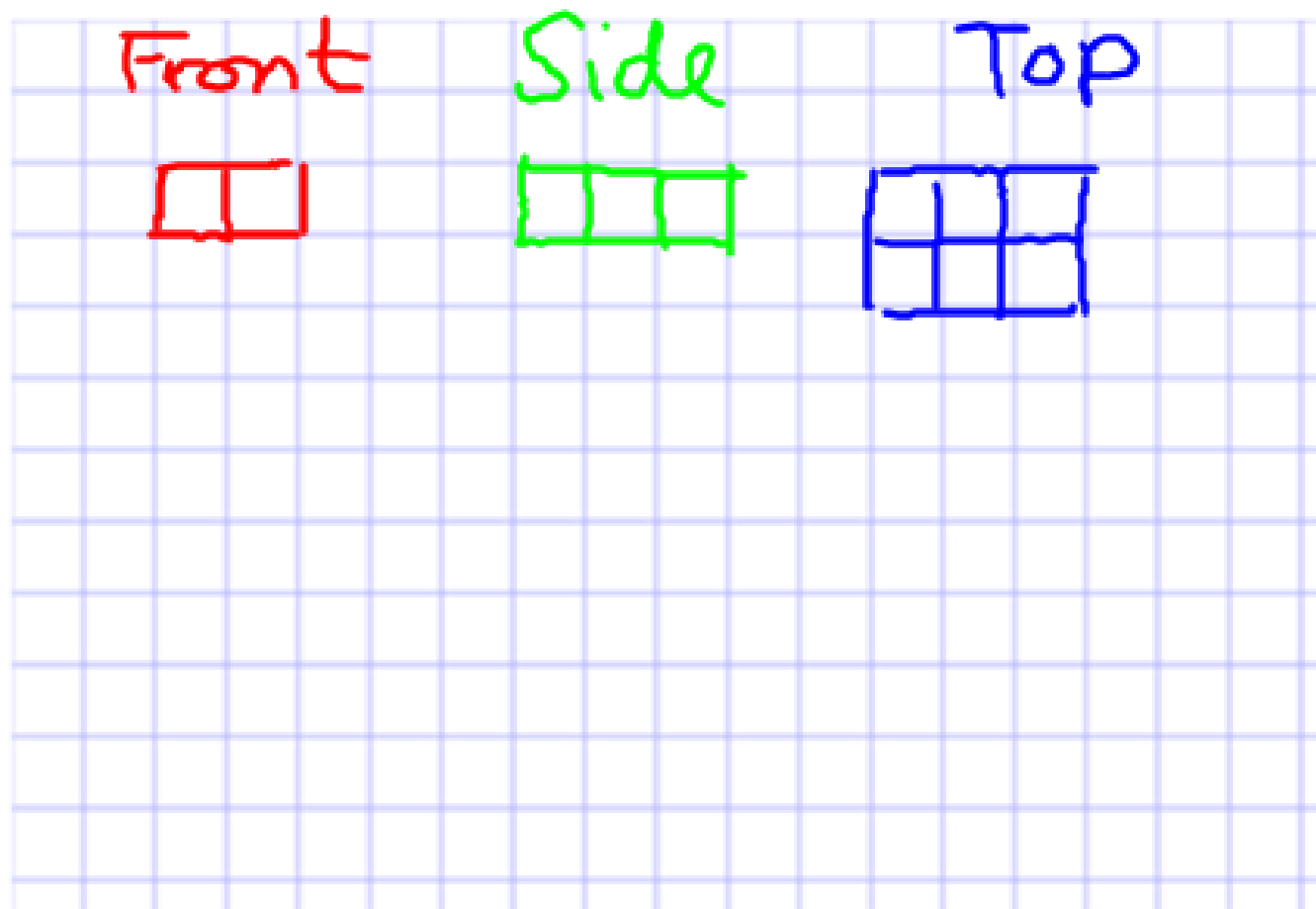
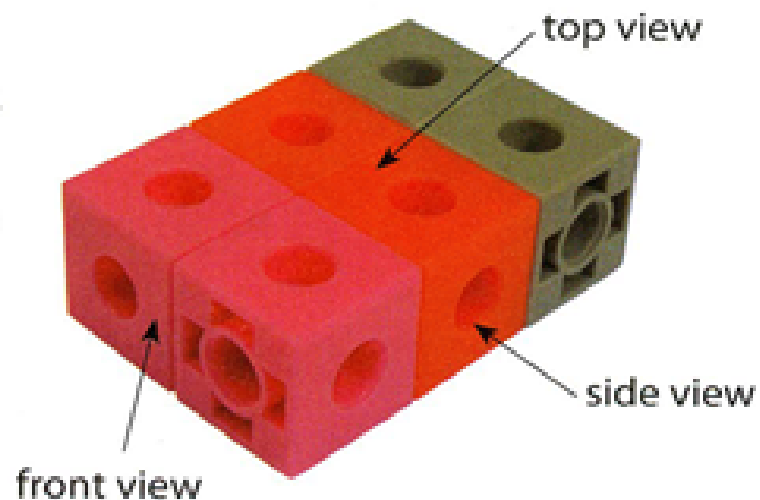


Your Turn

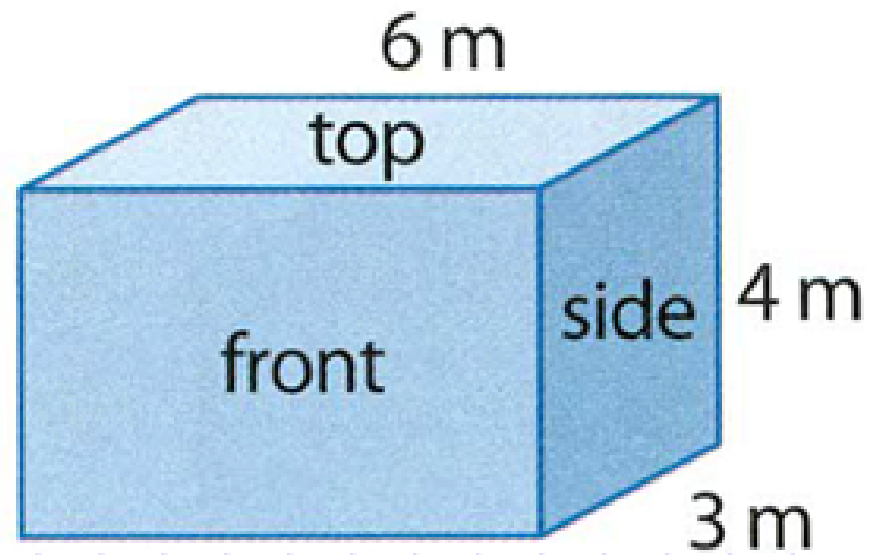
Draw and label the front view, side view, and top view of the rectangular prism shown. Use a scale of 1 square to 1 cube.

Draw the prism in two ways:

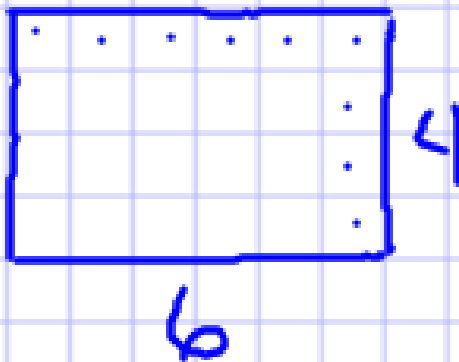
- on grid paper by hand
- using technology



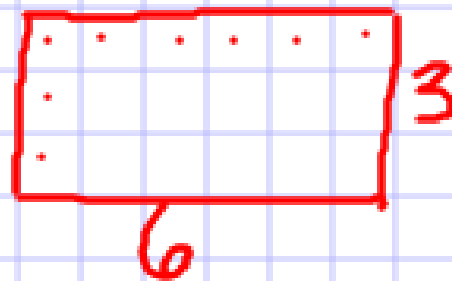
Use a scale of 1 square to 1 m



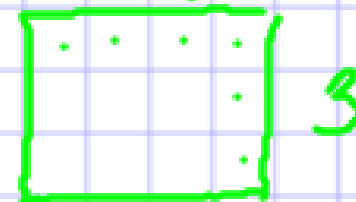
Front



Top



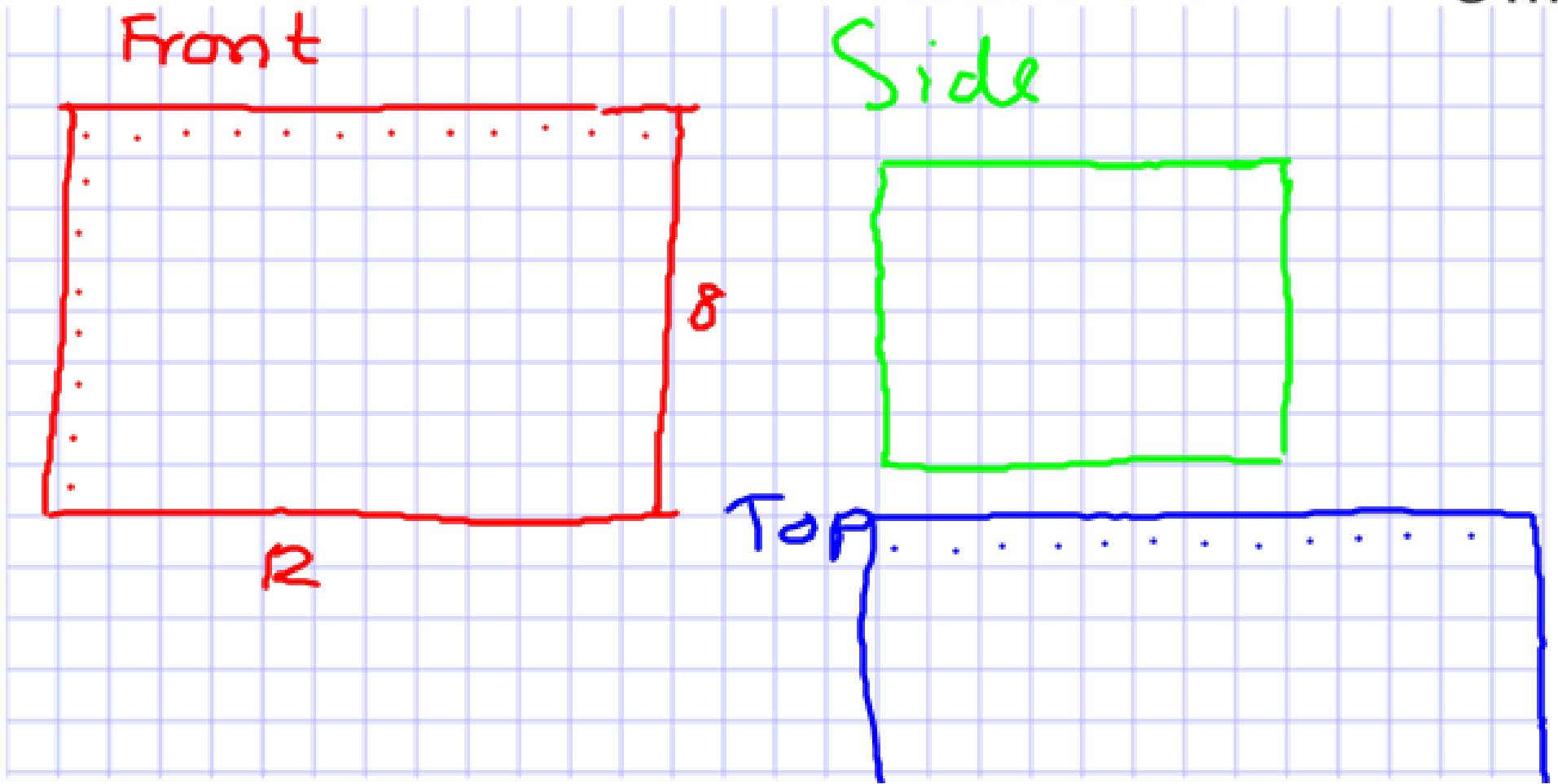
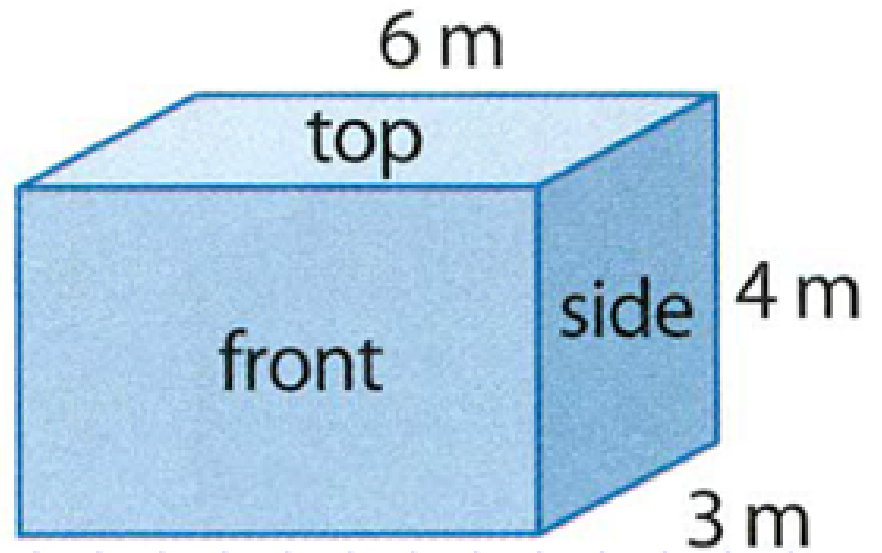
Side



Use a scale of 1 square to 50 cm

1 square = 0.5m

2 sq = 1m!



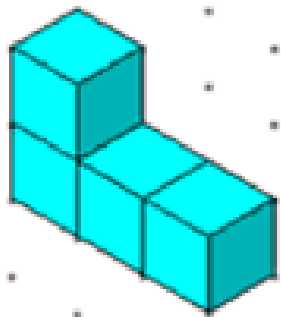


Figure 1

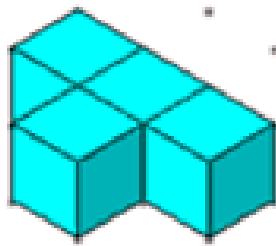


Figure 2

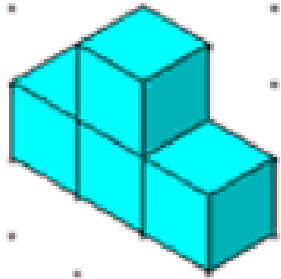


Figure 3

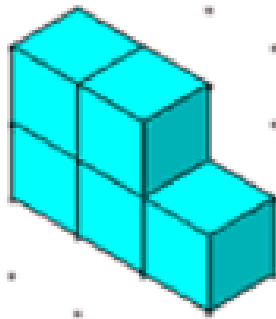
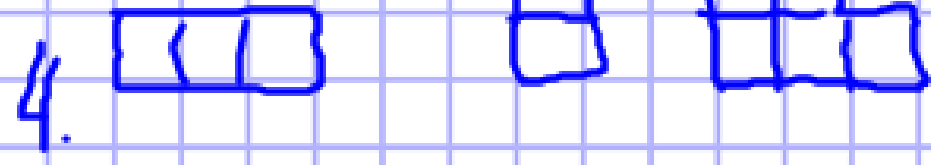
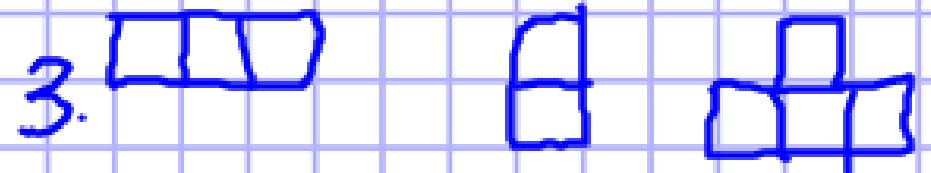
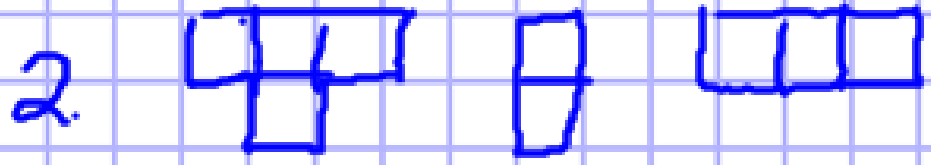
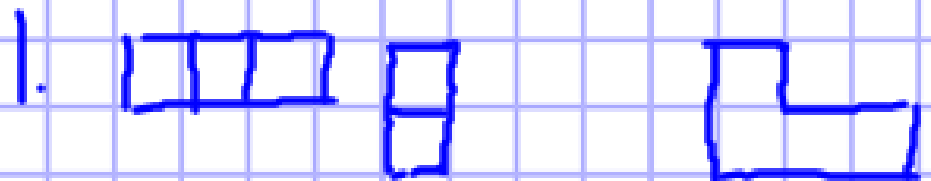


Figure 4

Top Front Side

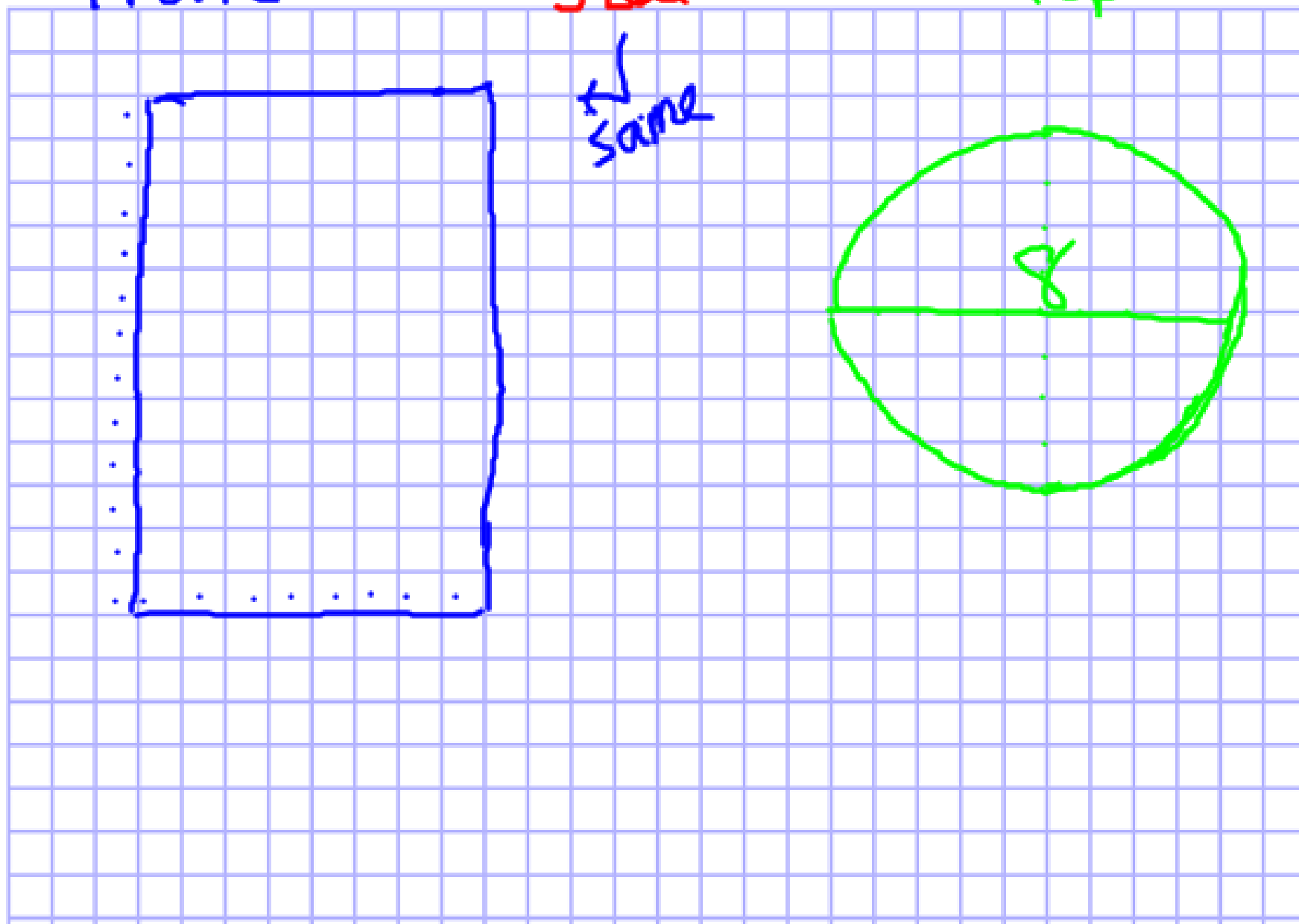


7. Draw the three views of a soup can that is 12 cm high and has a diameter of 8 cm.

Front

Side

Top



Now let's go back into 3D

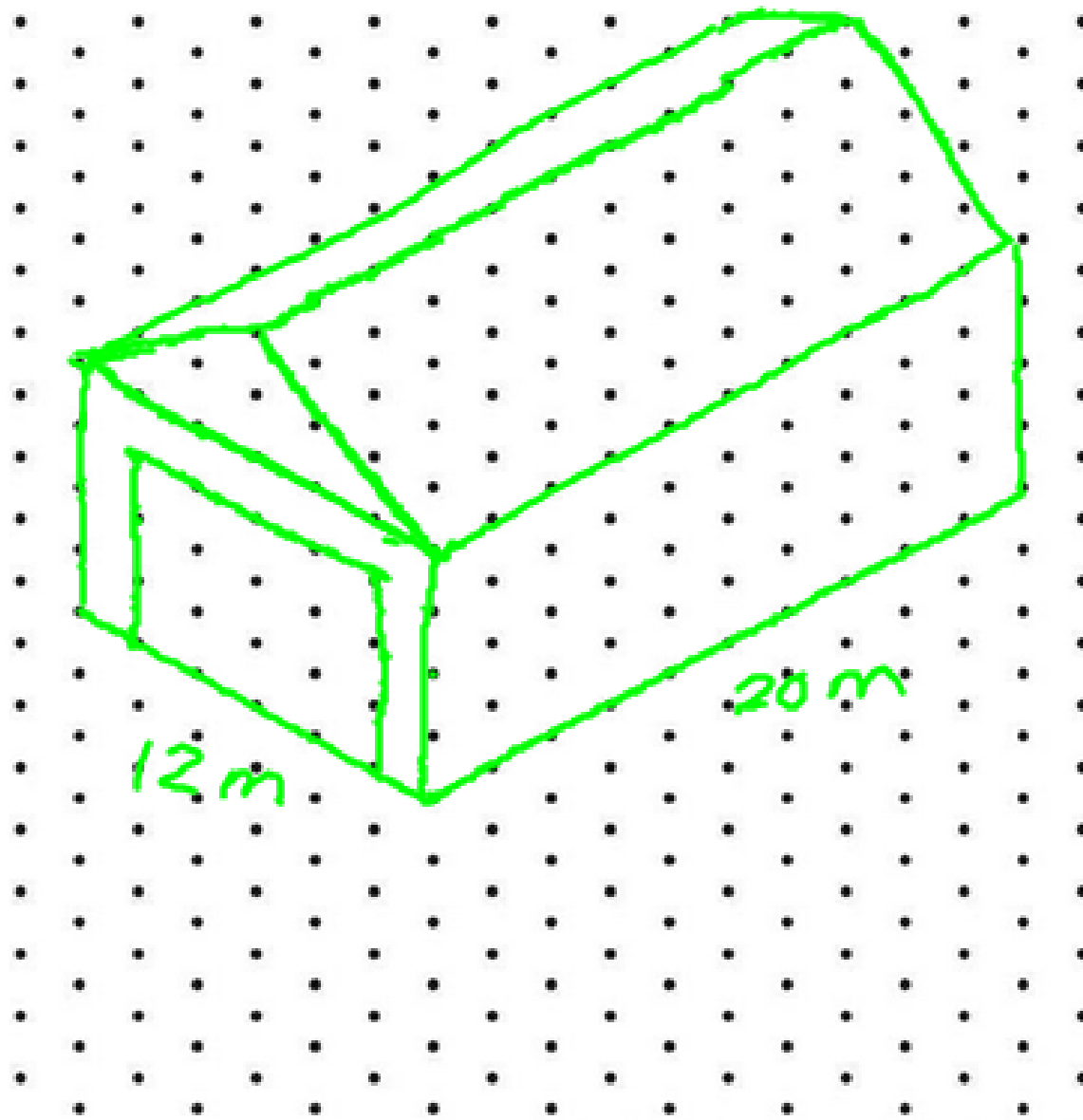
isometric drawing

- a view of a 3-D object in which
 - all horizontal edges of the object are drawn at a 30° angle
 - all vertical edges of the object are drawn vertically
 - all lines are drawn to scale

Where should we look at the object from to make it look 3D?

Let's go back to the garage...remember that it has a height of 12 m, a width of 12 m, and a length of 20 m.

$$h_{\square} = 8$$
$$h_{\triangle} = 4$$



Dist.
btw dots
= 2m

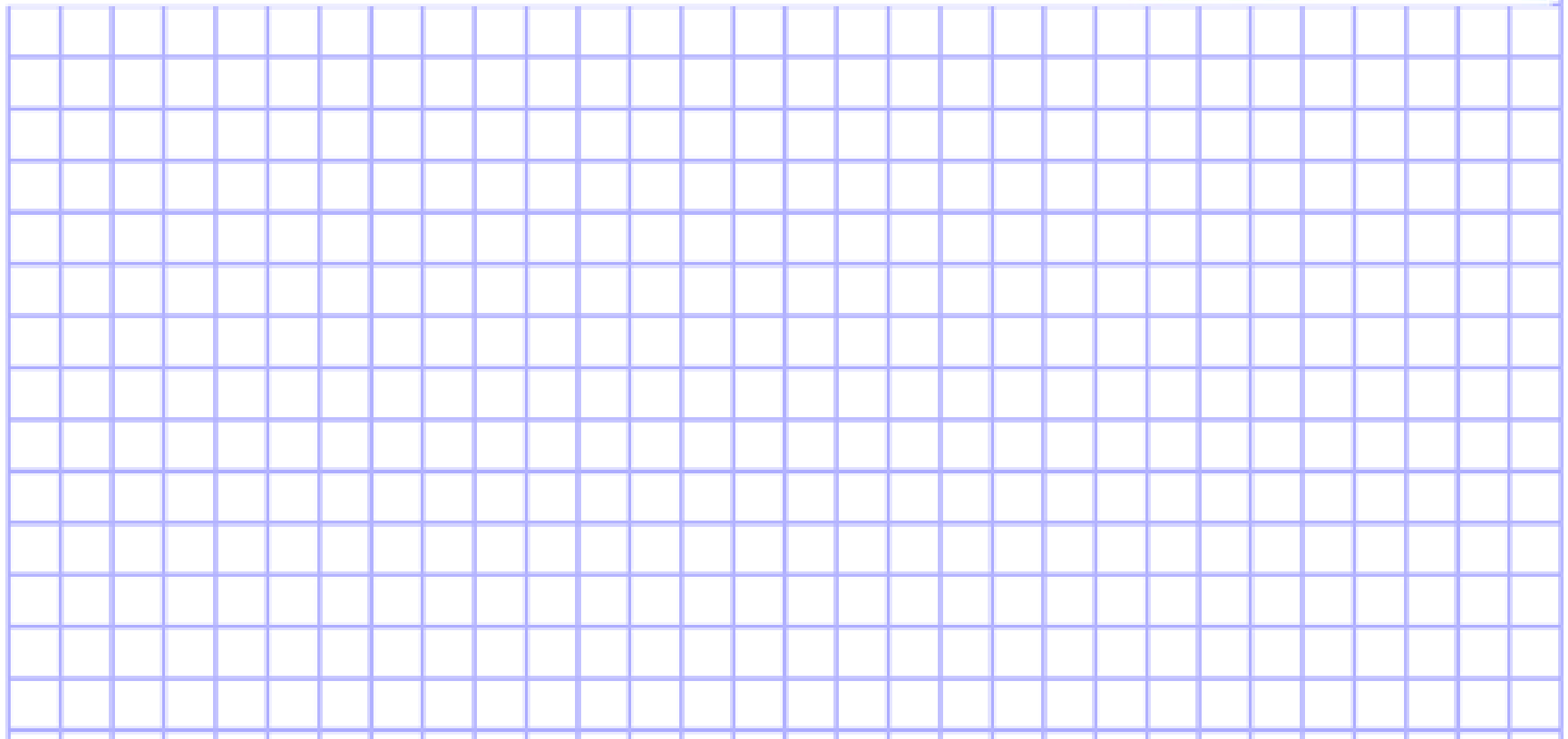
Homework:

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Apply It

6. On paper or using technology, draw a set of orthographic drawings of the cereal box shown. The dimensions of the box are approximately 12" by 8" by 3".



- 8.** A steam room in a fitness centre measures 10 feet by 6 feet. It has a U-shaped seating area around three sides of the room. The top view of the seating area is shown. Sketch the front view and the side view. The height of the seating area is 24 inches.

