

1. a. Use centimeter or inch graph paper to make a pattern for a closed box (rectangular prism). The box should have 6 sides, and when you fold the pattern, there should be no overlapping pieces of paper.

yes ✓

52 cm<sup>2</sup>

b. How much paper is your box made of? Be sure to use an appropriate unit in your answer.

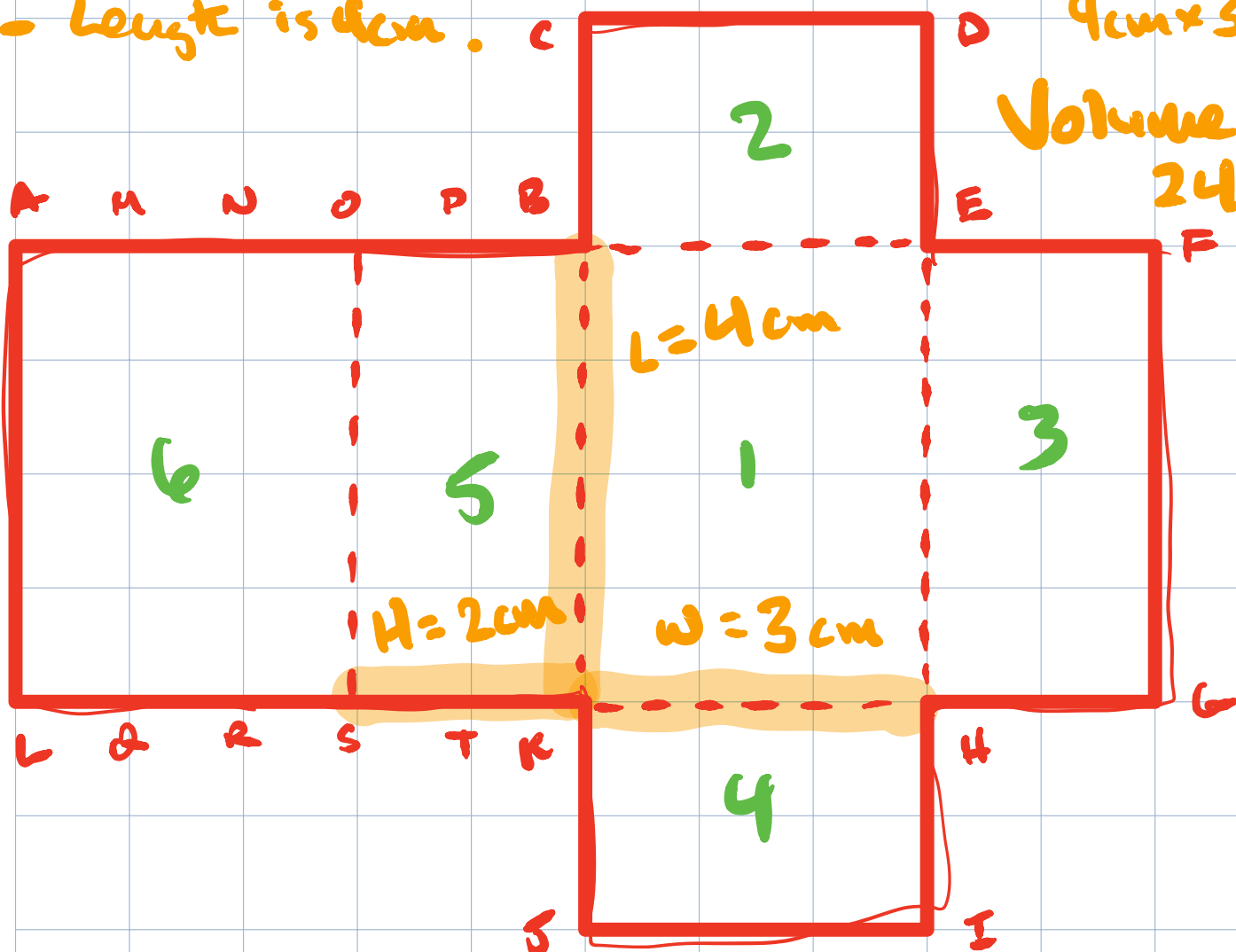
c. Describe one-dimensional, two-dimensional, and three-dimensional parts or aspects of your box. In each case, give the size of the part or aspect of the box, using an appropriate unit.

- Height is 2cm.
- Width is 3cm.
- Length is 4cm.

Dimensions of box is

$$4\text{cm} \times 3\text{cm} \times 2\text{cm}$$

Volume is 24 cm<sup>3</sup>.



## 2. Describe one-dimensional, two-dimensional, and three-dimensional parts or aspects of a water tower.

In each case, name an appropriate U.S. customary unit and an appropriate metric unit for measuring or describing the size of that part or aspect of the water tower. What are practical reasons for wanting to know the sizes of these parts or aspects of the water tower?

wooden

(1 yd = 3 ft)  
(1 m = 100 cm)

p508

(see p499)

| Aspect  | Dimensionality | US unit  | metric unit                            |
|---|----------------|--|--|
| height  | 1-D            | feet<br>yards  | meters                                 |
| weight<br>(mass)                              | 1-D            | pounds<br>tons   | kilograms                              |
| surface<br>area<br>"how much wood"            | 2-D            | square feet<br>square yards<br><del>acres</del> (unit a bit big) | m <sup>2</sup>                         |
| footprint L x W<br>"how much land underneath" | 2-D            | square yards<br>acres, mi <sup>2</sup>                           | m <sup>2</sup>                         |
| volume L x W x H<br>(how much water fits)     | 3-D            | ft <sup>3</sup><br>yd <sup>3</sup><br>gallons<br>(quarts)        | m <sup>3</sup><br>km <sup>3</sup><br>L |