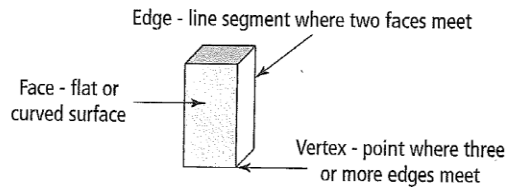
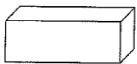
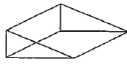



## Three-Dimensional Objects

You can describe a three-dimensional (3-D) object by its **faces**, **edges**, and **vertices**.



1. Identify the name and the number of edges, faces, and vertices for each object.

Object	Name	Faces	Edges	Vertices
a) 	Rectangular prism	6	12	8
b) 	Triangular prism	5	9	6
c) 	cube	6	12	8

## Circles

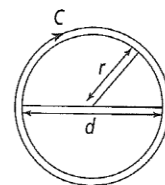
A **circle** is a set of points equal distance away from a fixed point, called the centre.

The **radius** is the distance from the centre of a circle to the outside edge. The letter  $r$  is often used to represent the radius.

The **diameter** is the distance across a circle through its centre. The letter  $d$  is often used to represent the diameter.

The distance around a circle is called the **circumference**. The letter  $C$  is often used to represent the circumference.

The diameter is two times the radius:  $d = 2r$ . The radius is half the diameter:  $r = \frac{d}{2}$ .



Name: \_\_\_\_\_

Date: \_\_\_\_\_

To find the circumference of a circle, use the formula  $C = \pi \times d$  or  $C = 2 \times \pi \times r$ . Use 3.14 as an approximate value for  $\pi$ .

$$C = \pi \times d$$

$$C = 2 \times \pi \times r$$

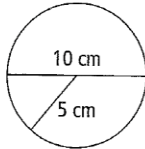
$$C \approx 2 \times 3.14 \times 5$$

$$C \approx 3.14 \times 10$$

$$C \approx 3.14$$

$$C \approx 3.14$$

The circumference is 3.14



$$C = \pi \times d$$

$$C \approx 3 \times 10$$

$$C \approx 30$$



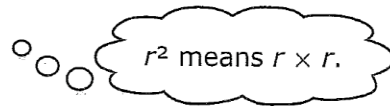
The area,  $A$ , of a circle is the space the circle encloses.

To find the area of a circle, use the formula  $A = \pi \times r^2$  or  $A = \pi r^2$ .

$$A = \pi \times r^2$$

$$A \approx 3.14 \times 5 \times 5$$

$$A \approx 78.5 \text{ The area is } 78.5 \text{ cm}^2.$$



2. a) Find the circumference of the circle to the nearest tenth of a centimetre.

A circle with a horizontal diameter line labeled "7 cm".

$$\begin{aligned} \pi d &= 3.14 \times 7 \\ &= 21.98 \\ &= 22.0 \text{ cm} \\ &22 \text{ cm} \end{aligned}$$

- b) Find the area of the circle to the nearest tenth of a centimetre squared.

A circle with a horizontal radius line from the center to the right edge labeled "2 cm".

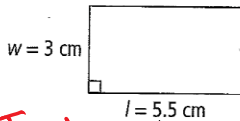
$$\begin{aligned} \pi r^2 &= \pi 2 \times 2 \\ &= 3.14 \times 2 \times 2 \\ &= 12.6 \text{ cm}^2 \end{aligned}$$

### Area Formulas

The **area** is the number of square units needed to cover a surface.

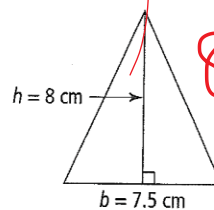
3. Use the formulas to calculate the area of these shapes to the nearest tenth of a centimetre squared.

- a) Rectangle:  $A = l \times w$



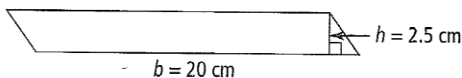
$$3 \times 5.5 = 16.5 \text{ cm}^2$$

- c) Triangle:  $A = b \times h \div 2$



$$8 \times 7.5 \div 2 = 30 \text{ cm}^2$$

- b) Parallelogram:  $A = b \times h$



$$\begin{aligned} 20 \text{ cm} \times 2.5 &= A \\ A &= 50 \text{ cm}^2 \end{aligned}$$

Name: \_\_\_\_\_

Date: \_\_\_\_\_

# 5.1

## Views of Three-Dimensional Objects

MathLinks 8, pages 164–169

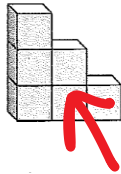
### Key Ideas Review

Choose from the following terms to complete #1

build    draw    front    three    3-D    top    side

1. a) A minimum of three views are needed to describe 3-D objects.
- b) Using the top, front, and side views, you can build or draw a 3-D object.

2. Label the views of the item.



top



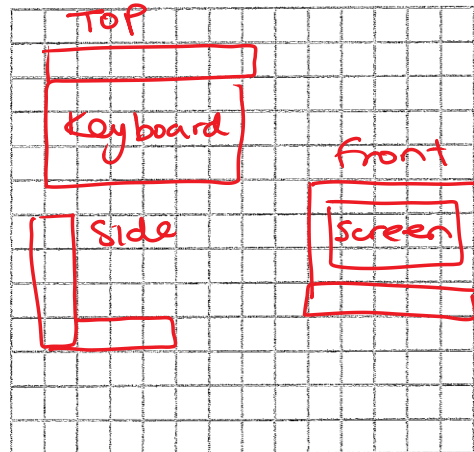
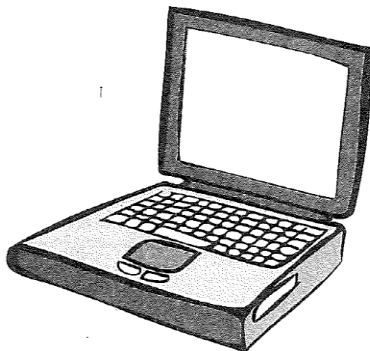
side



front

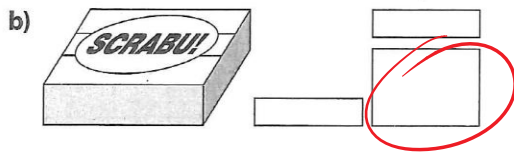
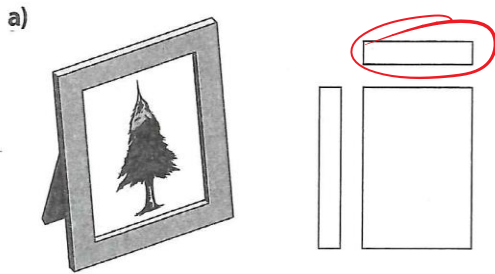
### Practise and Apply

3. Label each view. Sketch the top, side, and front views.

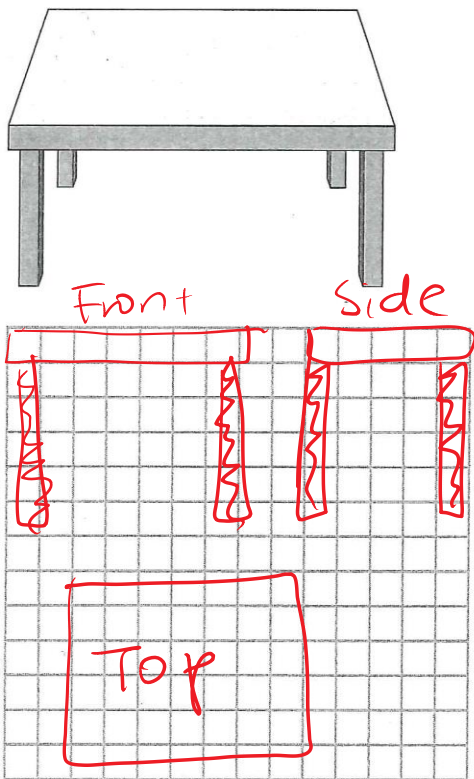


Name: \_\_\_\_\_

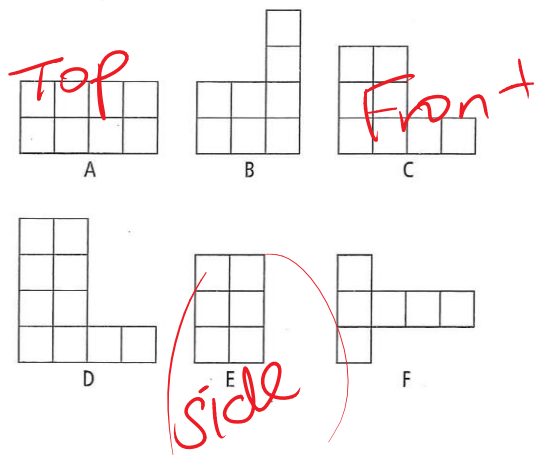
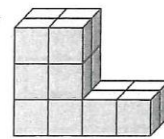
4. Circle the top view of each object.



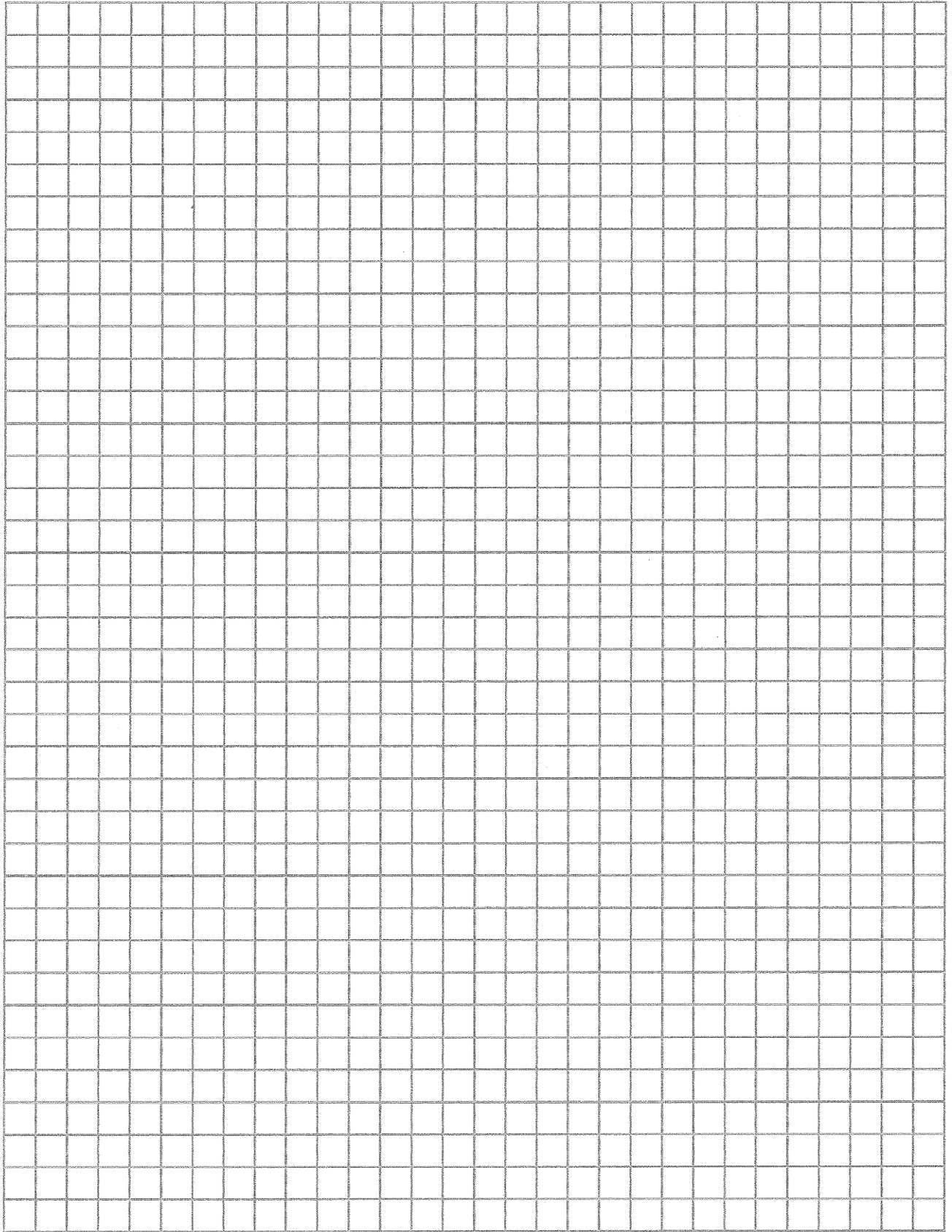
5. Draw and label the top, front, and side views of the table below.



6. Choose the correct top, front, and side view for this object and label each one.



\* use the graphing paper on the next page.



1 Block =  $\frac{1}{4}$  "



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