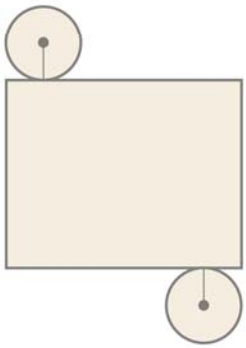
# PROBLEMS INVOLVING NETS OF SOLIDS ON TAKS

Below are examples of problems involving nets of solids in multiple choice format. Try solving the problems before looking at the solutions. (Cover the solutions with a piece of paper.) Then check your solutions against the ones given.

**1.** The net of a cylinder is shown. Use a ruler to determine the dimensions to the nearest tenth of a centimeter. Which is the best approximation of the cylinder's volume?



**A** $1\ cm^3$

**B** $2\ cm^3$

**C** $3\ cm^3$

**D** $8\ cm^3$

**Solution**

To find the volume of the cylinder, you need to know its height and radius. The height of the rectangular portion of the net is the height of the cylinder. Using a metric ruler, you can find that the height of the cylinder is approximately 2.5 cm. The radius of each circle is approximately 0.5 cm.

$V = \pi r^2 h$

$\approx \pi \cdot 0.5^2 \cdot 2.5$

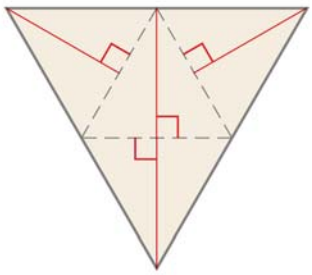
$\approx 1.96\ cm^3$

The best approximation of the cylinder's volume is $2\ cm^3$.

The correct answer is B.

(A) (B) (C) (D)

**2.** The net of a pyramid made of congruent equilateral triangles is shown below. Use a ruler to determine the dimensions of the triangles to the nearest tenth of a centimeter. Find the lateral surface area of the pyramid to the nearest square centimeter.



**F** $5\ cm^2$

**G** $7\ cm^2$

**H** $8\ cm^2$

**J** $10\ cm^2$

**Solution**

Using a metric ruler, you can find that each triangle has a side length of approximately 2 cm. The height of each triangle is approximately 1.7 cm.

To find the lateral surface area L of the pyramid, find the combined area of the 3 outer triangles.

$L = 3 \cdot \frac{1}{2}bh$

$\approx 3 \cdot \frac{1}{2} \cdot 2 \cdot 1.7$

$\approx 5.1\ cm^2$

The lateral surface area is $5\ cm^2$ to the nearest square centimeter.

The correct answer is F.

(F) (G) (H) (J)