TAKS Objective 8
TEK 8.8A
Tutorial
(Grades 9 and 10)

…find lateral and total surface area of prisms, pyramids, and cylinders using models and nets.

The only time you are to use the ruler on the formula chart is when the problem states to do so.

Be sure to use the correct unit of measurement. The problem will tell you whether to use inches or centimeters and how accurate to be.

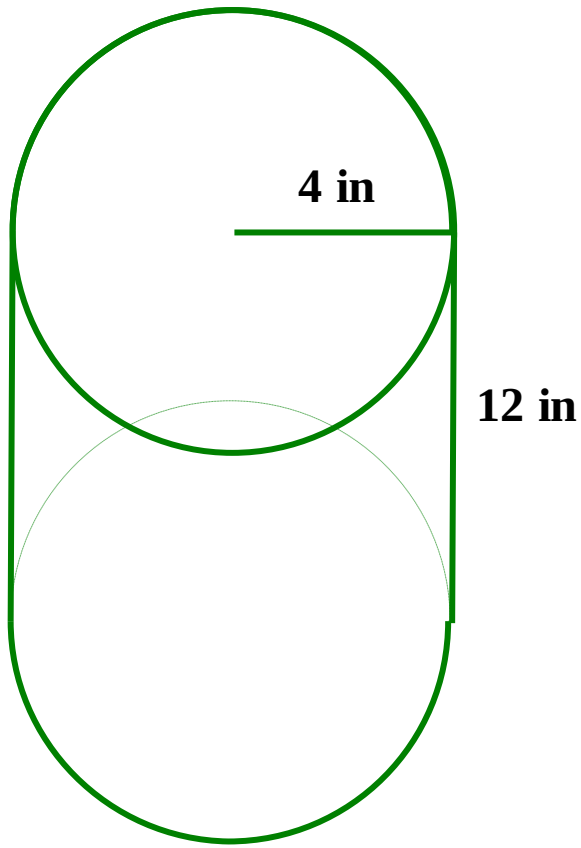
What is the formula for finding the lateral surface area of a cylinder?

$$S = 2\pi rh$$

What is the formula for finding the surface area of a cylinder?

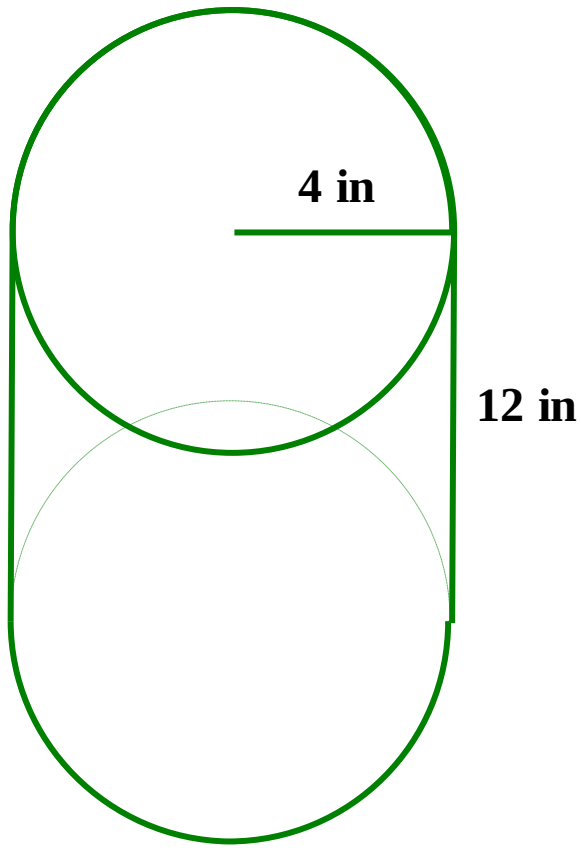
$$S = 2\pi rh + 2\pi r^2$$

Find the lateral surface area.



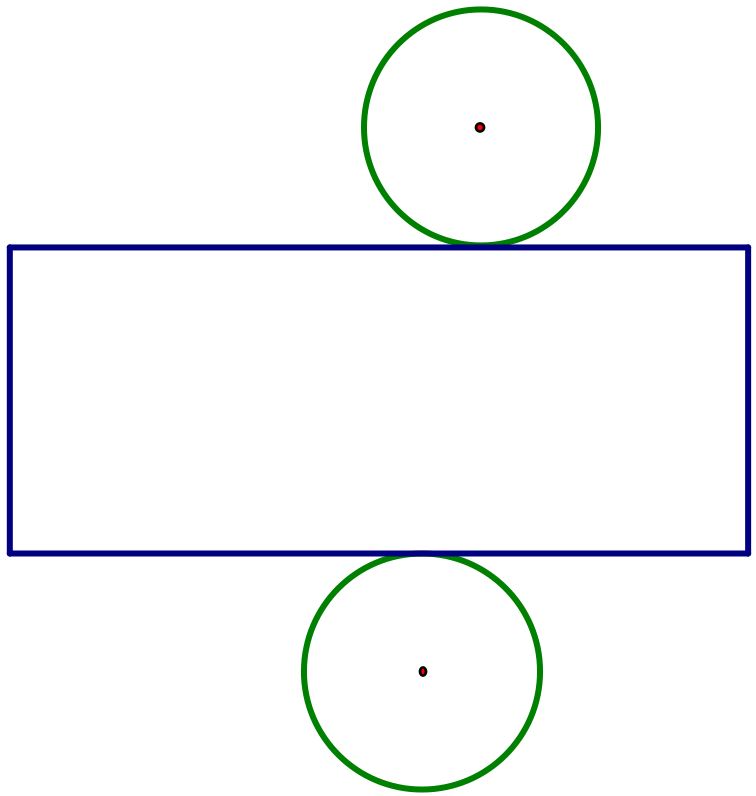
$$S = 2\pi rh$$
$$= 2\pi(4)(12)$$
$$= 96\pi in^2$$

Find the surface area.



$$S = 2\pi rh + 2\pi r^2$$
$$= 2\pi(4)(12) + 2\pi(4)^2$$
$$= 96\pi + 32\pi$$
$$= 128\pi \text{ in}^2$$

Use the ruler to find the surface area. Measurements are to be to the nearest tenth of a centimeter.

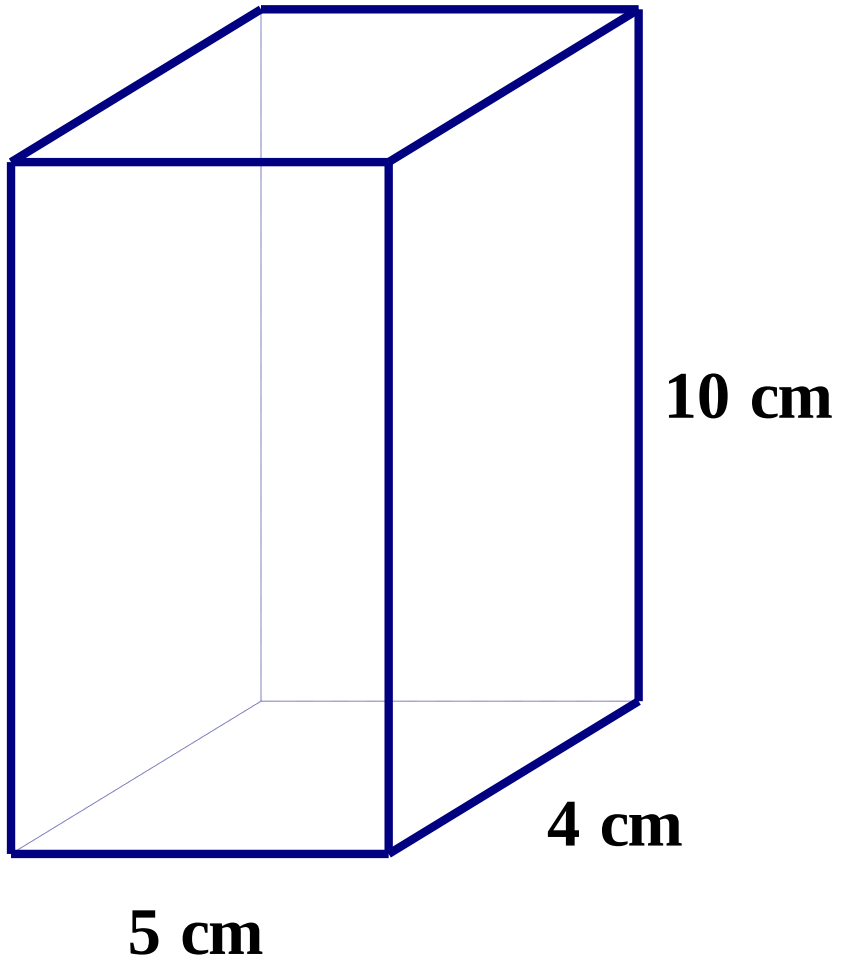


Measure the length and width of the rectangle and find the area.

Measure the radius and find the area of the circle.

Add the area of the three parts.

Find the surface area.



Method 1: Find the area of the six sides and add together.

5 x 4 = 20

5 x 4 = 20

4 x 10 = 40

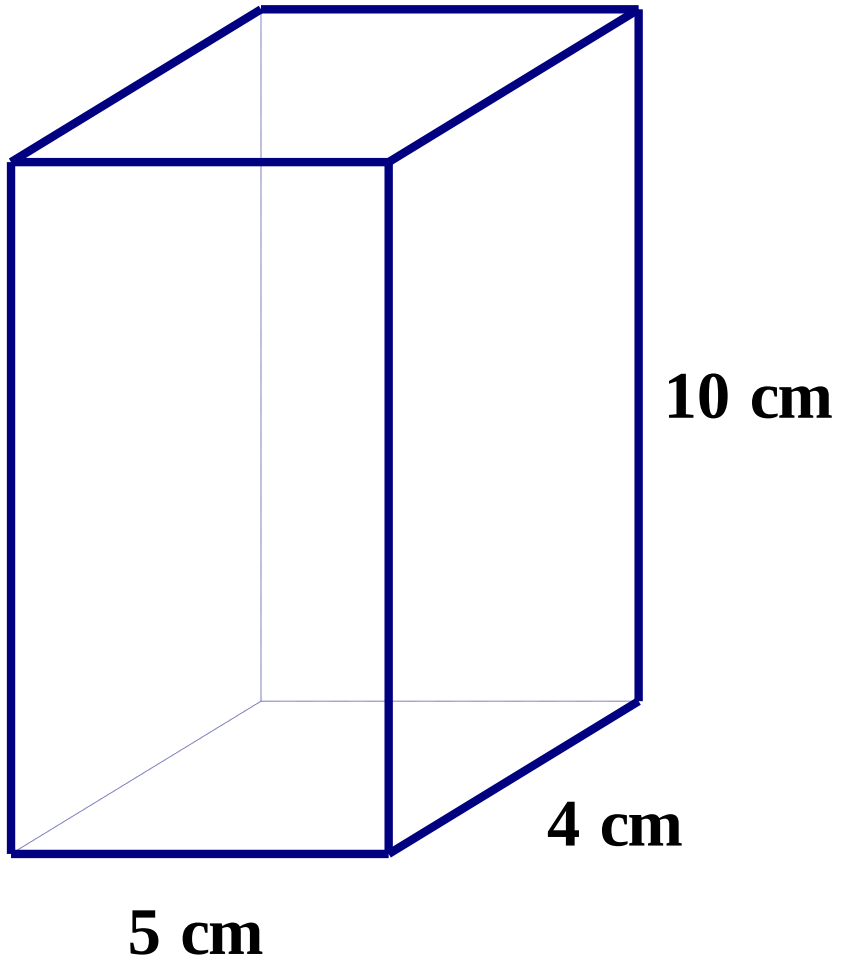
4 x 10 = 40

5 x 10 = 50

5 x 10 = 50

220 cm^2

Find the surface area.



Method 2: Use the formula. S = Ph + 2B

$P = 5 + 4 + 5 + 4 = 18$

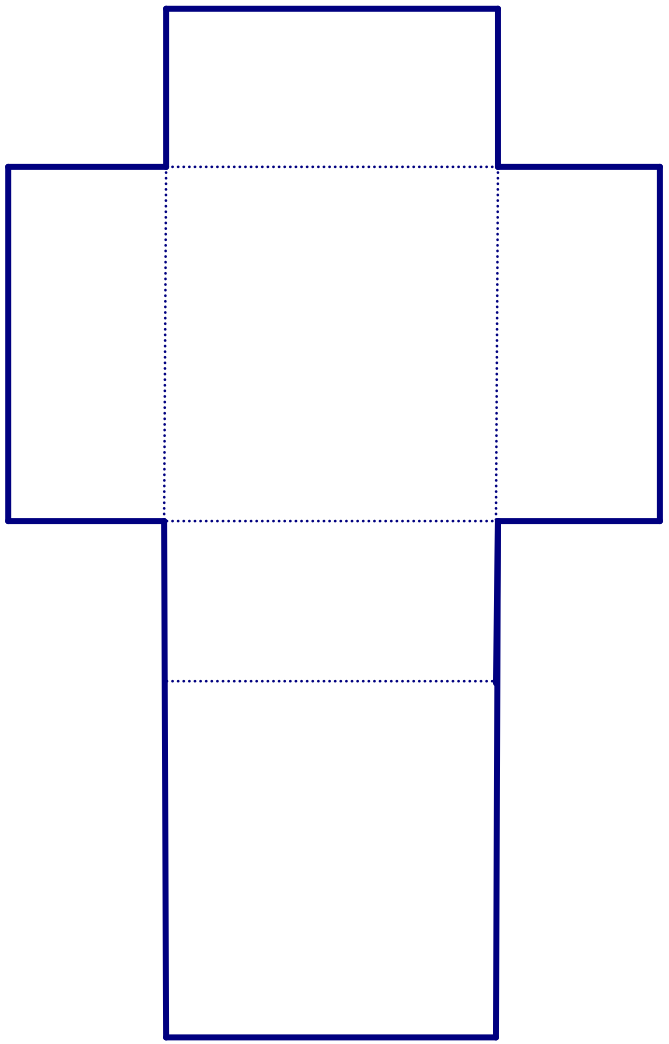
$B = 5 \times 4 = 20$

$S = Ph + 2B$

$= 18(10) + 2(20)$

$= 220 \text{ cm}^2$

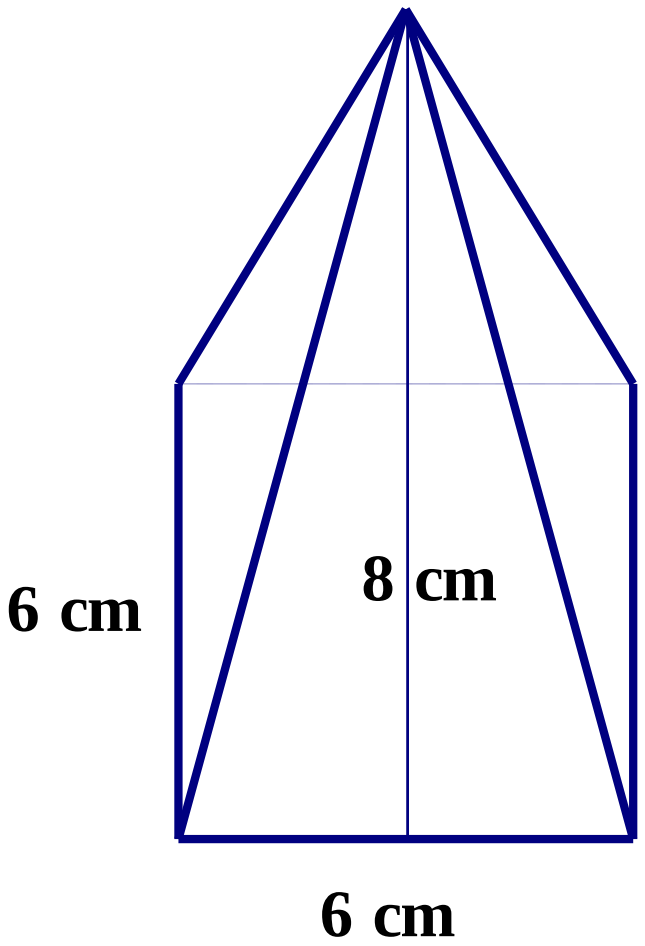
Using the ruler, measure lengths to the nearest 1/8th of an inch and find the surface area.



Measure the length and width of each rectangle and find the area.

Add all the areas together.

Find the lateral surface area.



Method 1: Find the area of the five sides and add together.

$6 \times 6 = 36$

$\frac{1}{2}(6)(8) = 24$

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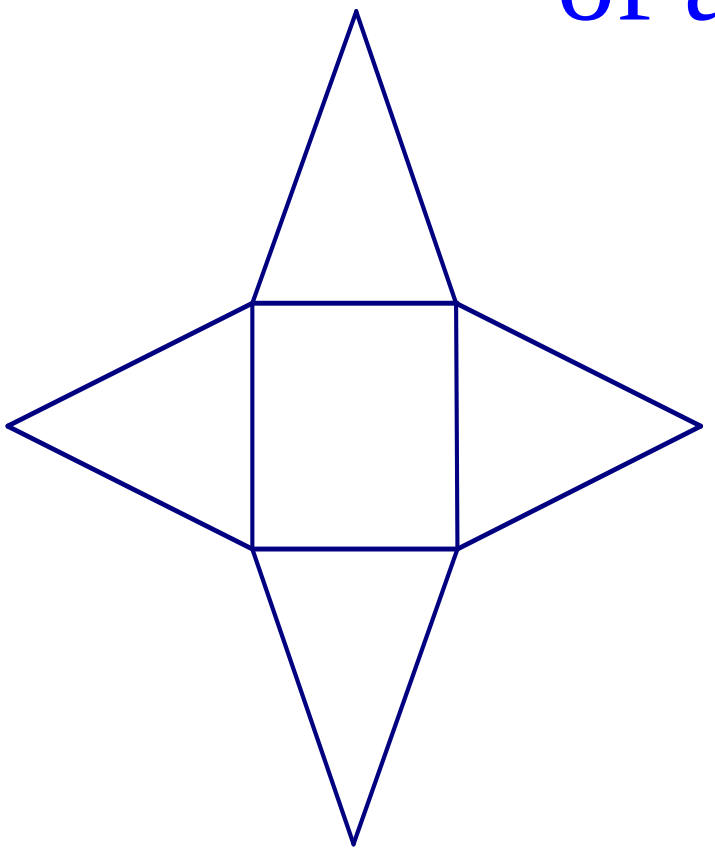
$\frac{1}{2}(6)(8) = \underline{24}$

132 cm^2

Use the ruler to find the surface area. Measurements are to be to the nearest tenth of a centimeter.



Measure the length and width of the rectangle and find the area.

Measure the base and height of the triangle and find the area.

Add the areas of the five parts.