

Review of surface area for prisms and cylinders.

- Prism - A solid object with two identical ends and flat sides.
- Cylinder - A solid object with two identical flat ends that are circular or elliptical and one curved side.

Solving surface area problems

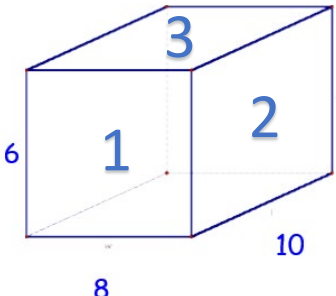
Step 1 - determine the shapes present, identifying repeats if any

Step 2 - create a roadmap/algorithm to follow that includes each face

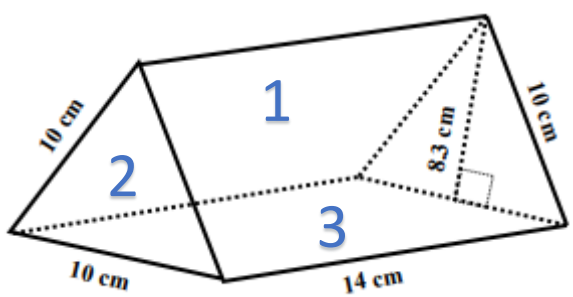
Step 3 - plug the formulas into the roadmap. Complete step by step.

Step 4 - solve including the unit

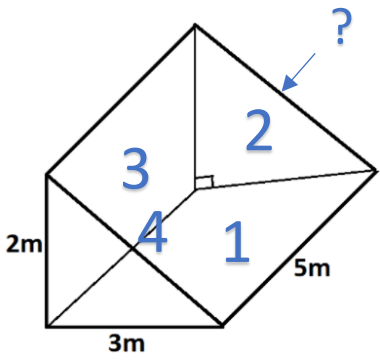
Example 1 Rectangular prism

	<p>Step 1: all shapes are parallelograms. There are 3 different pairs.</p> <p>Step 2: $A_t = A_1 + A_2 + A_3$</p> <p>Step 3:</p> $A_t = 2bh + 2bh + 2bh$ $A_t = 2(6)(8) + 2(10)(6) + 2(10)(8)$ $A_t = 96 + 120 + 160$ <p>Step 4: $A_t = 376 \text{ units}^2$</p>
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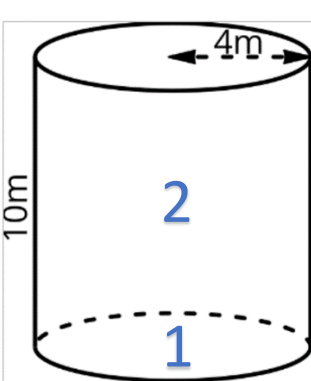
Example 2 Triangular prism

	<p>Step 1: shapes are 3 congruent parallelograms and congruent pair of triangles.</p> <p>Step 2: $A_t = A_1 + A_2$</p> <p>Step 3:</p> $A_t = 3bh + (2).5bh + bh$ $A_t = 3(10)(14) + 2(.5)(10)(8.3)$ $A_t = 420 + 83$ <p>Step 4: $A_t = 503 \text{ cm}^2$</p>
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Example 3 – Triangular prism when you need to determine the hypotenuse first.
(one edge is missing)

	<p>Step 1: we have 3 parallelograms and a pair of triangles. We don't know one side (hypotenuse) of the triangles.</p> <p>Step 2: $A_t = A_1 + A_2 + A_3 + A_4$</p> <p>Step 3: First find the hypotenuse. You need this measurement.</p> $a^2 + b^2 = c^2$ $2^2 + 3^2 = c^2$ $4 + 9 = c^2$ $13 = c^2$ <p>3.61 = c (rounded)</p> $A_t = bh + (2).5bh + bh + bh$ $A_t = (5)(3) + 2(.5)(3)(2) + (5)(2) + (5)(3.61)$ $A_t = 15 + 6 + 10 + 18.03$ <p>Step: $A_t = 49.03 \text{ m}^2$</p>
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Example 4 Cylinder. The circumference of the circle is equal to base of the parallelogram.

	<p>Step 1: a parallelogram and two circles.</p> <p>Step 2: $A_t = A_1 + A_2$</p> <p>Step 3: First get the base by finding the circumference.</p> $C = \pi D$ $C = \pi(8)$ <p>C = 25.13 (rounded here)</p> $A_t = 2\pi r^2 + 25.13(10)$ $A_t = 2\pi 4^2 + 251.37$ $A_t = 100.53 + 251.37$ <p>Step 4: $A_t = 351.9 \text{ m}^2$</p>
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