

Geometry/Trig

Name: _____

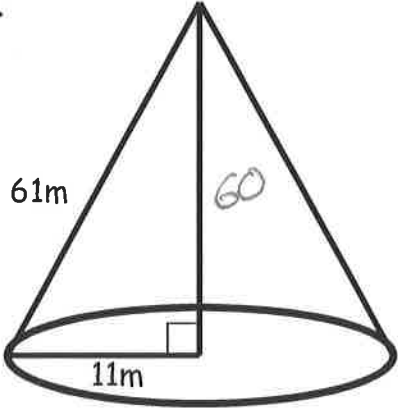
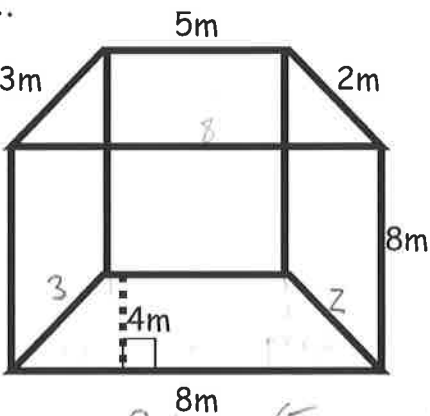
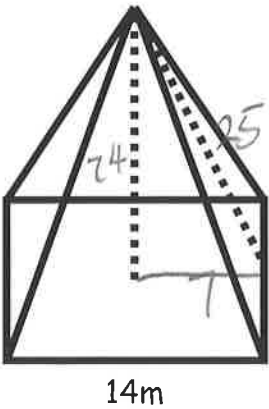
Extra practice

Date: _____

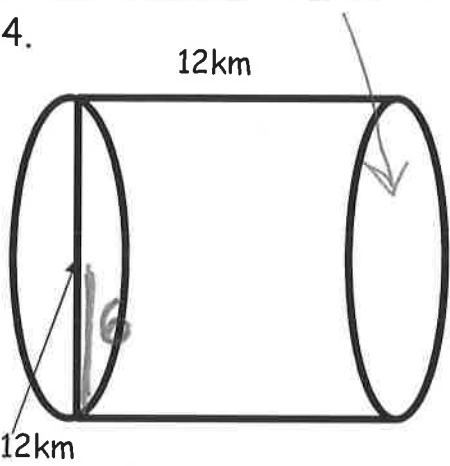
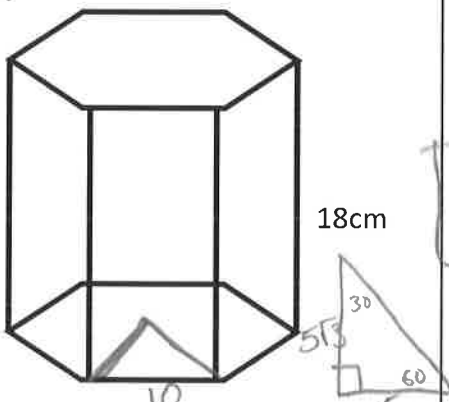
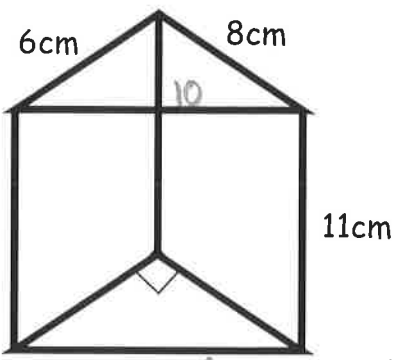
Directions: Calculate the Lateral Area, Total Area, and Volume of each solid. Also, provide the name for each solid. You must show all work (formula, substitution). Leave all answers in terms of π and simplified square roots when appropriate. Label all answers!

Volume

Area

<p>1.</p>  <p>Name: <u>Cone</u></p>	$V = \frac{1}{3} \pi r^2 h$ $= \frac{1}{3} \pi \cdot 11^2 \cdot 60$ $= 2420 \pi \text{ m}^3$	<p>Lateral Area:</p> $LA = \pi r l$ $LA = \pi \cdot 11 \cdot 61$ $LA = 671 \pi \text{ m}^2$ <p>Total Area:</p> $TA = LA + B$ $TA = 671 \pi + \pi 11^2$ $671 \pi + 121 \pi$ $= 792 \pi \text{ m}^2$
<p>2.</p>  <p>Name: <u>Prism (Trapezoid base)</u></p>	$V = B \cdot h$ $V = 26 \cdot 8$ $V = 208 \text{ m}^3$	<p>Lateral Area: $LA = ph$</p> $LA = 18 \cdot 8$ $= 144 \text{ m}^2$ <p>Total Area: $TA = LA + 2B$</p> $= 144 + 2 \left(\frac{1}{2} h (b_1 + b_2) \right)$ $= 144 + 52 = 196 \text{ m}^2$
<p>3.</p>  <p>Name: <u>Pyramid</u></p>	$V = \frac{1}{3} B h$ $V = \frac{1}{3} \cdot 196 \cdot 24$ $V = 1568 \text{ m}^3$	<p>Lateral Area: $LA = \frac{1}{2} p l$</p> $= \frac{1}{2} \cdot 56 \cdot 25$ $= 700 \text{ m}^2$ <p>Total Area: $TA = LA + B$</p> $TA = 700 + 196$ $TA = 896 \text{ m}^2$

Directions: Calculate the Lateral Area, Total Area, and Volume of each solid. Also, provide the name for each solid. You must show all work (formula, substitution). Leave all answers in terms of π and simplified square roots when appropriate. Label all answers.

	Base	Volume	Area
4.	 <p>12km</p> <p>12km</p> <p>6</p>	$V = \pi r^2 h$ $V = \pi 6^2 \cdot 12$ $V = 432 \pi \text{ km}^3$	<p>Lateral Area: $LA = 2\pi rh$</p> $2\pi \cdot 6 \cdot 12$ $144 \pi \text{ km}^2$ <p>Total Area:</p> $TA = LA + 2B$ $TA = 144\pi + 2(\pi r^2)$ $= 144\pi + 2(36\pi)$ $144\pi + 72\pi$ $= 216 \pi$
5.	 <p>18cm</p> <p>10</p> <p>30</p> <p>5√3</p> <p>60</p> <p>The base of the solid is a regular hexagon with a perimeter of 60cm.</p>	$V = Bh$ $V = 150\sqrt{3} \cdot 18$ $V = 2700\sqrt{3} \text{ cm}^3$	<p>Lateral Area: $LA = ph$</p> $= 60 \cdot 18$ $= 1080 \text{ cm}^2$ <p>Total Area: $TA = LA + 2B$</p> $= 1080 + 2\left(\frac{1}{2} \cdot a \cdot p\right)$ $1080 + 2\left(\frac{1}{2} \cdot 5\sqrt{3} \cdot 60\right)$ $1080 + 300\sqrt{3} \text{ cm}^2$
6.	 <p>6cm</p> <p>8cm</p> <p>10</p> <p>11cm</p>	$V = Bh$ $V = \left(\frac{1}{2} \cdot 8 \cdot 6\right) \cdot 11$ $V = 264 \text{ cm}^3$	<p>Lateral Area:</p> $LA = ph$ $LA = 24 \cdot 11$ $LA = 264 \text{ cm}^2$ <p>Total Area:</p> $TA = LA + 2B$ $TA = 264 + 2\left(\frac{1}{2} \cdot 8 \cdot 6\right)$ $= 264 + 48$ $= 312 \text{ cm}^2$

Name: Prism (Triangular base)