

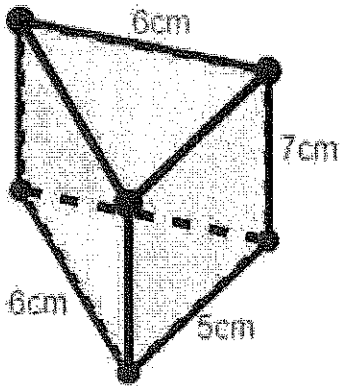
Name: Key!

Block: Yippie!

Surface Area 3 - Nets and Surface Area

Draw proportional nets for the following shapes. Appropriate measurements should be included for each side-length, with hash marks to indicate equal side-lengths. Then, compute the surface area of each shape to one decimal place.

(triangular prism)

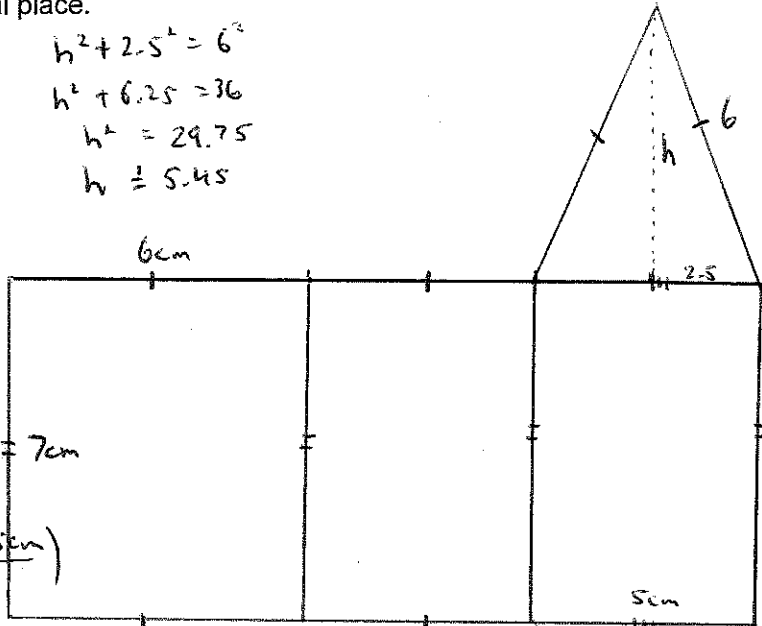


$$h^2 + 2.5^2 = 6^2$$

$$h^2 + 6.25 = 36$$

$$h^2 = 29.75$$

$$h \approx 5.45$$



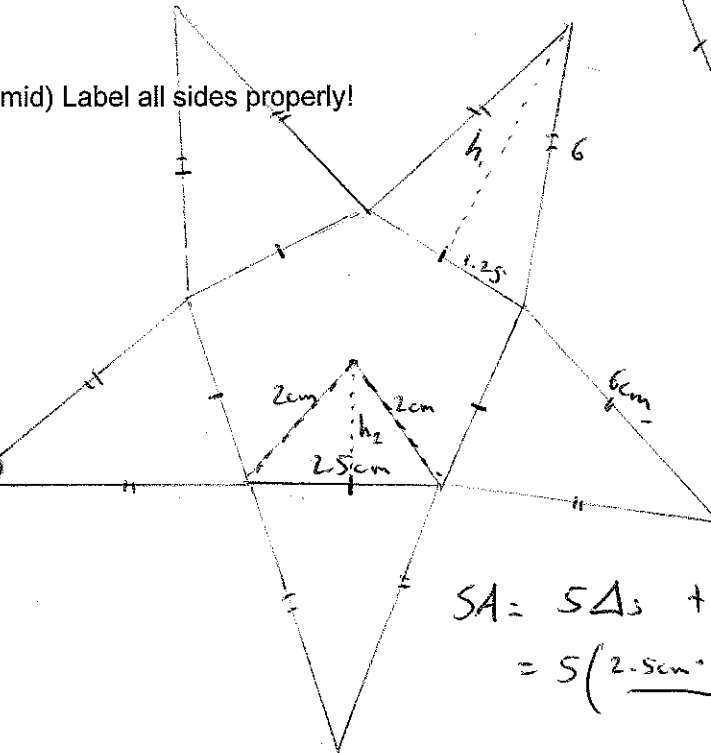
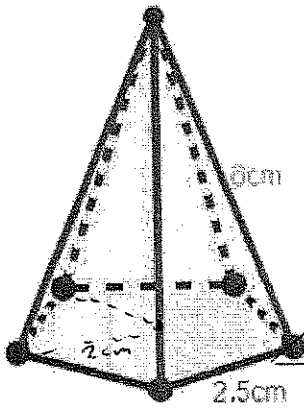
SA = 3 rectangles + 2 triangles

$$= 2(6cm \cdot 7cm) + (5cm \cdot 7cm) + 2\left(\frac{5cm \cdot 5.45cm}{2}\right)$$

$$= 2(42cm^2) + 35cm^2 + 27.25cm^2$$

$$= \underline{146.25cm^2}$$

(regular pentagonal pyramid) Label all sides properly!



$$h_2^2 + (1.25cm)^2 = (2cm)^2$$

$$h_2^2 + 1.5625cm^2 = 4cm^2$$

$$h_2^2 = 2.4375cm^2$$

$$h_2 \approx 1.56cm$$

$$h_1^2 + (1.25cm)^2 = (6cm)^2$$

$$h_1^2 + 1.5625cm^2 = 36cm^2$$

$$h_1^2 = 34.4375cm^2$$

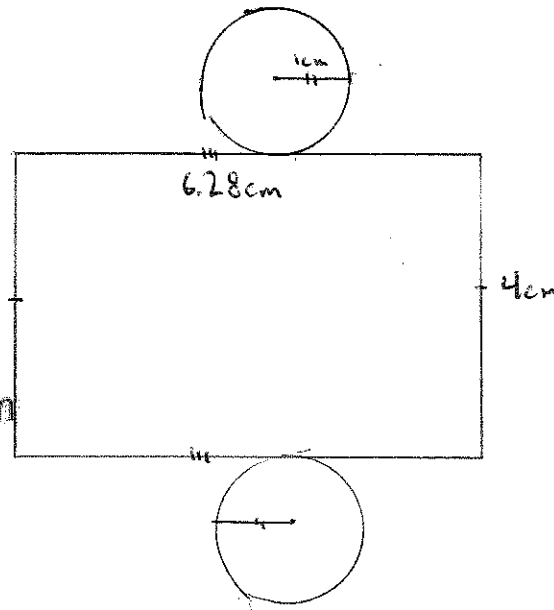
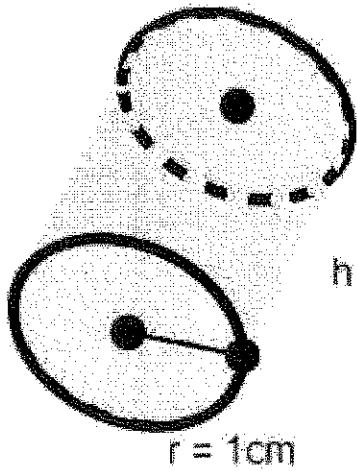
$$h_1 \approx 5.87cm$$

$$SA = 5\Delta_s + 5\Delta_b$$

$$= 5\left(\frac{2.5cm \cdot 1.56cm}{2}\right) + 5(2.5cm \cdot 5.87cm)$$

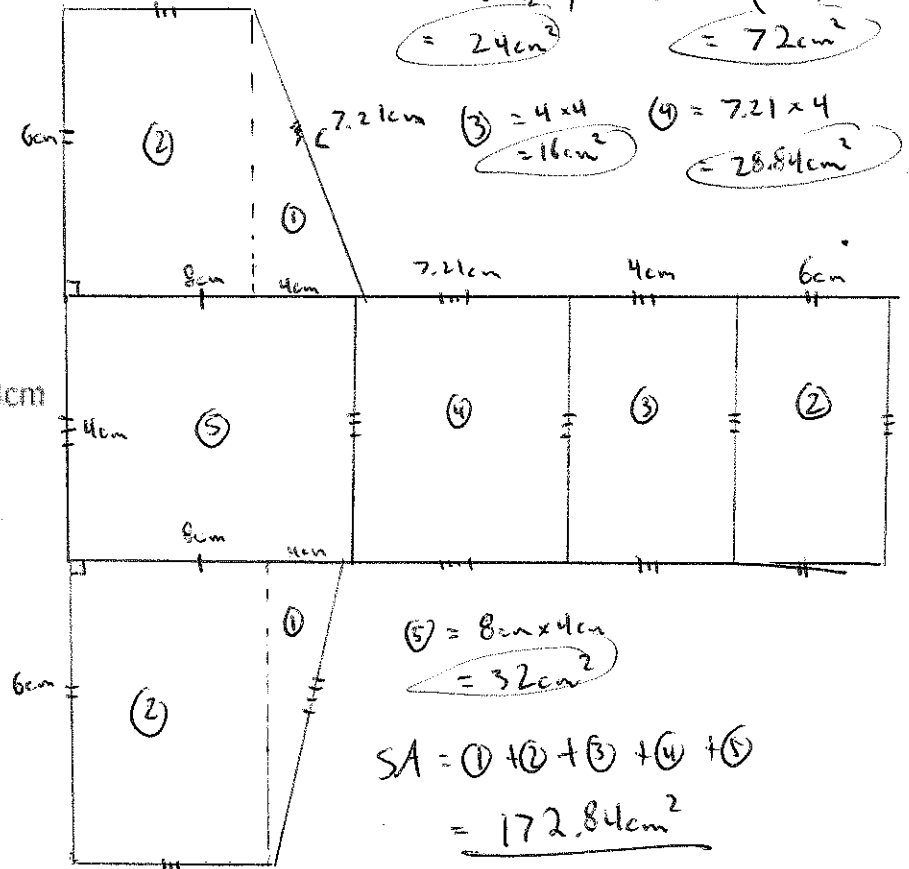
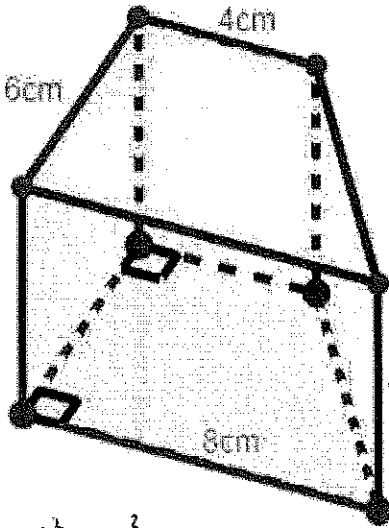
$$\approx 46.44cm^2$$

(cylinder)



$$\begin{aligned}
 SA &= 2O + \square \\
 &= 2\pi r^2 + lw \\
 &= 2\pi(1\text{cm})^2 + (6.28\text{cm})(4\text{cm}) \\
 &= 6.28\text{cm}^2 + 25.12\text{cm}^2 \\
 &= \underline{31.4\text{cm}^2}
 \end{aligned}$$

(prism) Pay attention to the side-lengths!



$$\begin{aligned}
 \textcircled{1} &= 2\left(\frac{4 \times 6}{2}\right) \\
 &= 24\text{cm}^2
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{2} &= 3(6 \times 4) \\
 &= 72\text{cm}^2
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{3} &= 4 \times 4 \\
 &= 16\text{cm}^2
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{4} &= 7.21 \times 4 \\
 &= 28.84\text{cm}^2
 \end{aligned}$$

$$\begin{aligned}
 (6\text{cm})^2 + (4\text{cm})^2 &= c^2 \\
 36\text{cm}^2 + 16\text{cm}^2 &= c^2 \\
 52\text{cm}^2 &= c^2 \\
 \underline{7.21\text{cm}} &= c
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{5} &= 8\text{cm} \times 4\text{cm} \\
 &= 32\text{cm}^2
 \end{aligned}$$

$$\begin{aligned}
 SA &= \textcircled{1} + \textcircled{2} + \textcircled{3} + \textcircled{4} + \textcircled{5} \\
 &= \underline{172.84\text{cm}^2}
 \end{aligned}$$