# Making a dog kennel

This is Aily. She needs a kennel. She is 60cm high, 80 cm long and 30 cm wide.



(The kennel is a square prism with a triangular prism on top)

1. The floor is a square with side length of 80 cm. The rectangular walls each share a side with the floor. Write an expression for the area of the 4 walls and floor in terms of the height, $h$.

   Area = 80 × 80 + ___ × ___ × $h$

   Area = _____ + ___ $h$

   _____

   _____

2. The roof is made of two rectangles and two triangles. The area of the triangular side is 1200 cm². The formula for a triangle's area is $\frac{1}{2}b \times h$. If the height is 30 cm, then find the base, $b$.

   1200 $=$ $\frac{1}{2}b \times h$

   1200 $=$ $\frac{1}{2}b \times$ _____

   1200 × ___ $= b \times$ _____

   _____

   _____

   _____

3. The surface area of the roof is 10,400 cm² (which includes the 2 triangles of area 1200 cm² each and 2 rectangles). The breadth of the rectangle is 80 cm. Find the length of the rectangle, $l$.

   Area of one rectangle $= \frac{1}{2}(10400 - 2 \times 1200)$

   $=$ _____

   Formula for rectangle's area is $A = l \times b$

   _____ $= l \times$ _____

   ___ □ ___ $=$ _____          (Pick an operation: +-×÷)

   _____

   _____

   _____

   _____

4. The total surface area is 36,000 cm². We need to have 10% paint left over for touch-ups. One can of paint contains enough paint for 10 m², which is 100,000 cm². How many cans of paint do we need? (Hint: Round up)

Number of cans = $\dfrac{\underline{\hspace{2cm}} \times (\underline{\hspace{1cm}} + \underline{\hspace{1cm}})}{\underline{\hspace{3cm}}}$

_____

_____

5. Your neighbour is willing to buy leftover paint (parts of a can). The amount of paint cans you have leftover is given by 1 – (40,000 cm² ÷ amount of paint in a can in cm²). She will pay 30 dollars per can. How much money do you get?

Leftover paint = $1 - \dfrac{40000 \text{ cm}^2}{\underline{\hspace{2cm}} \text{ cm}^2}$ cans

Payment = \$30 × _____

Payment = \$ _____