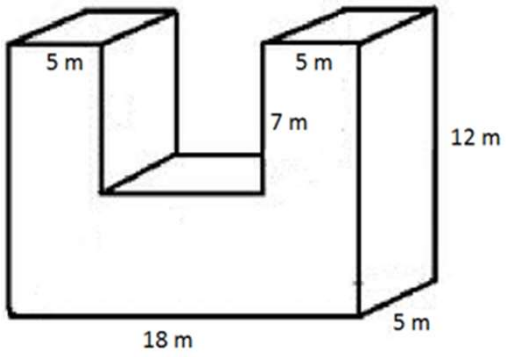
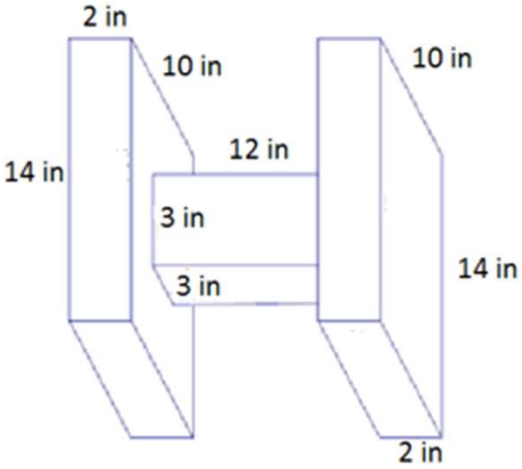
Surface Area Worksheets

Determine the surface area of each figure. Assume all faces are rectangles unless it is indicated otherwise.





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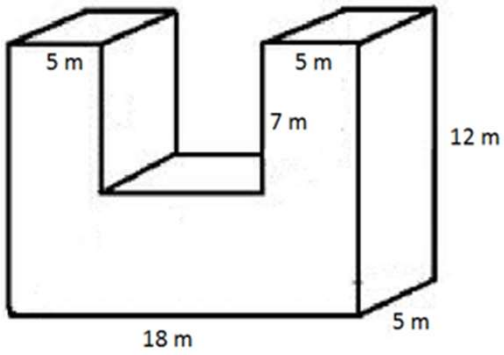
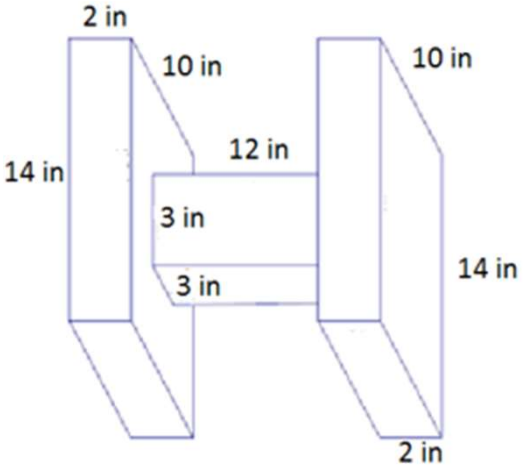


$$
\begin{aligned}
\textit{Top and bottom} &= 2(18\text{ m} \times 5\text{ m}) = 180\text{ m}^2 \\
\textit{Extra interior sides} &= 2(5\text{ m} \times 7\text{ m}) = 70\text{ m}^2 \\
\textit{Left and right sides} &= 2(5\text{ m} \times 12\text{ m}) = 120\text{ m}^2 \\
\textit{Front and back sides} &= 2\big((18\text{ m} \times 12\text{ m}) - (8\text{ m} \times 7\text{ m})\big) \\
&= 2(216\text{ m}^2 - 56\text{ m}^2) \\
&= 2(160\text{ m}^2) \\
&= 320\text{ m}^2 \\
\textit{Surface area} &= 180\text{ m}^2 + 70\text{ m}^2 + 120\text{ m}^2 + 320\text{ m}^2 \\
&= 690\text{ m}^2
\end{aligned}
$$



Surface area of one of the prisms on the sides:

$$
\begin{aligned}
\textit{Area of front and back} &= 2(2\text{ in.} \times 14\text{ in.}) \\
&= 56\text{ in}^2 \\
\textit{Area of top and bottom} &= 2(2\text{ in.} \times 10\text{ in.}) \\
&= 40\text{ in}^2 \\
\textit{Area of side} &= 14\text{ in.} \times 10\text{ in.} = 140\text{ in}^2 \\
\textit{Area of side with hole} &= 14\text{ in.} \times 10\text{ in.} - 3\text{ in.} \times 3\text{ in.} \\
&= 131\text{ in}^2
\end{aligned}
$$

There are two such rectangular prisms, so the surface area of both is 734 in^2.

Surface area of middle prism:

$$
\begin{aligned}
\textit{Area of front and back} &= 2(3\text{ in.} \times 12\text{ in.}) = 72\text{ in}^2 \\
\textit{Area of sides} &= 2(3\text{ in.} \times 12\text{ in.}) = 72\text{ in}^2 \\
\textit{Surface area of middle prism} &= 72\text{ in}^2 + 72\text{ in}^2 = 144\text{ in}^2
\end{aligned}
$$

The total surface area of the figure is $734\text{ in}^2 + 144\text{ in}^2 = 878\text{ in}^2$.