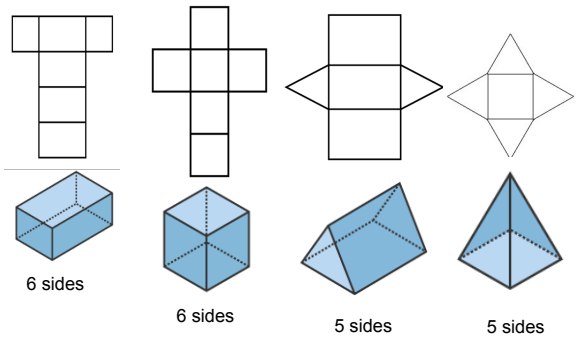
10.9 Surface Area

The **surface area** of a three-dimensional figure is the sum of the areas of its surfaces.

To help you see all the surfaces of a three-dimensional figure, you can use a *net*.

A **net** is the pattern made when the surface of a three-dimensional figure is layed out flat showing each face of the figure.

May 27-3:17 PM



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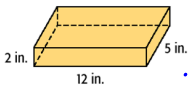
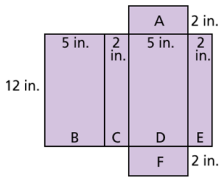
Method 1: Use a net.



Area . 2 in



A: $A = 5 \times 2 = 10$
B: $A = 12 \times 5 = 60$
C: $A = 12 \times 2 = 24$
D: $A = 12 \times 5 = 60$
E: $A = 12 \times 2 = 24$
F: $A = 5 \times 2 = 10$

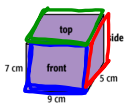
Add the areas of each face.

$S = 10 + 60 + 24 + 60 + 24 + 10 = 188$

The surface area is 188 in^2.

May 31-9:11 AM

Method 2: Use a three-dimensional drawing.



Front: $9 \times 7 = 63 \longrightarrow 63 \times 2 = 126$
Top: $9 \times 5 = 45 \longrightarrow 45 \times 2 = 90$
Side: $7 \times 5 = 35 \longrightarrow 35 \times 2 = 70$

$S = 126 + 90 + 70 = 286$ *Add the areas of each face.*

The surface area is 286 cm^2.

286

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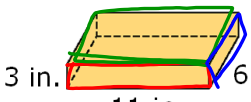
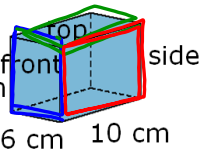


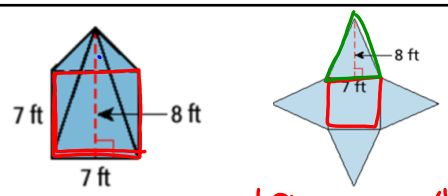
Front: $11 \cdot 3 = 33$ x 2 = 66
Top: $11 \cdot 6 = 66$ x 2 = 132
Side: $6 \cdot 3 = 18$ x 2 = 36
Surface Area: Total of all areas= 234 in^2

May 31-9:12 AM



Front: $8 \cdot 6 = 48$ x 2 = 96
Top: $6 \cdot 10 = 60$ x 2 = 120
Side: $10 \cdot 8 = 80$ x 2 = 160
Surface Area: Total of all areas= 376 cm^2

May 31-9:12 AM

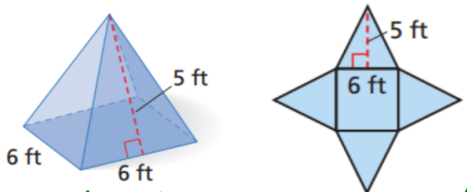


Base: $7 \cdot 7 = 49$ = 49

Side: $7 \cdot 8 \div 2 = 28$ x 4 = 112

Surface Area: Total of all areas= $161\ ft^2$

May 31-9:12 AM



Base: $6 \cdot 6 = 36$ = 36

Side: $5 \cdot 6 \div 2 = 15$ x 4 = 60

Surface Area: Total of all areas= $96\ ft^2$

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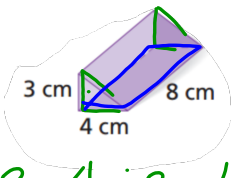

Base: $3 \cdot 4 \div 2 = 6$ x 2 = 12

Side: $8 \cdot 4 = 32$ x 3 = 96

Surface Area: Total of all areas= $108\ cm^2$

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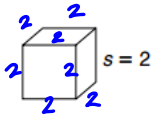
Find the surface area.



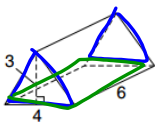
Front: $2 \cdot 2 = 4$ x 2 = 8

Top: $2 \cdot 2 = 4$ x 2 = 8

Side: $2 \cdot 2 = 4$ x 2 = 8

Surface Area: Total of all areas= 24

May 31-9:26 AM

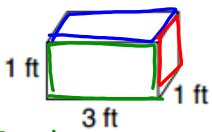


Base: $4 \cdot 3 \div 2 = 6$ x 2 = 12

Side: $6 \cdot 4 = 24$ x 3 = 72

Surface Area: Total of all areas= 84

May 31-9:26 AM



Front: $3 \cdot 1 = 3$ x 2 = 6

Top: $3 \cdot 1 = 3$ x 2 = 6

Side: $1 \cdot 1 = 1$ x 2 = 2

Surface Area: Total of all areas= $14\ ft^2$

May 31-9:27 AM