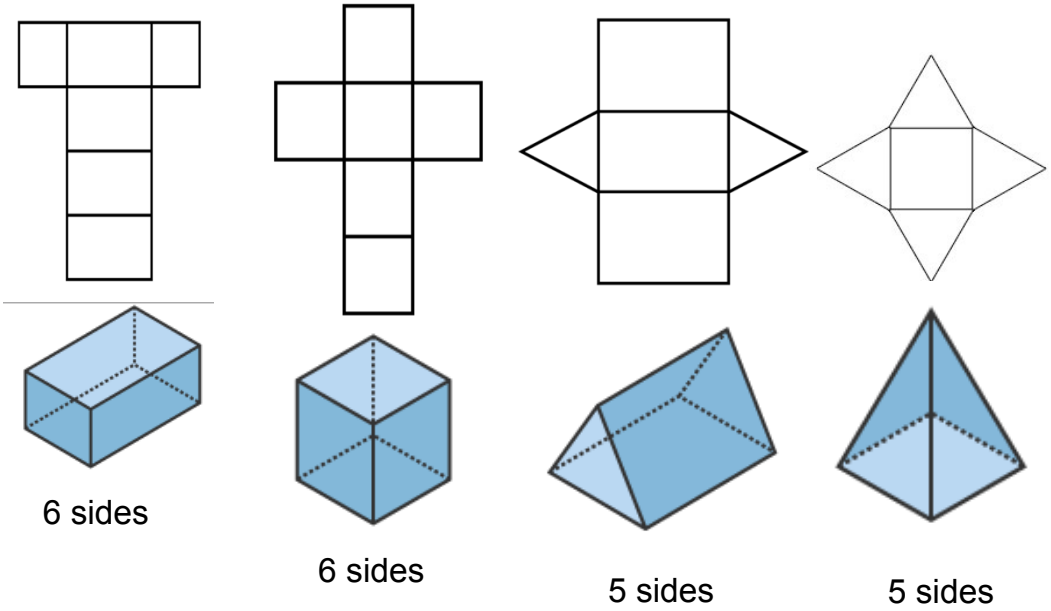
10.9 Surface Area

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*.

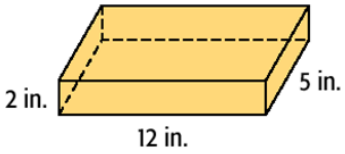
A **net** is the pattern made when the surface of a three-dimensional figure is layed out flat showing each face of the figure.

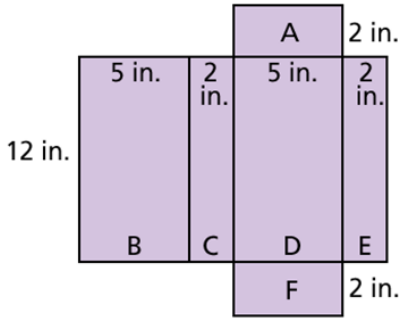
May 27-3:17 PM



May 31-9:15 AM

Method 1: Use a net.





A: $A = 5 \times 2 = 10$

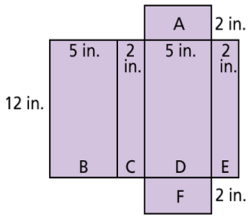
B: $A = 12 \times 5 = 60$

C: $A = 12 \times 2 = 24$

D: $A = 12 \times 5 = 60$

E: $A = 12 \times 2 = 24$

F: $A = 5 \times 2 = 10$



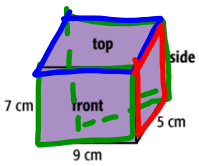
Add the areas of each face.

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

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: $9 \times 5 = 45 \longrightarrow 45 \times 2 = 90$

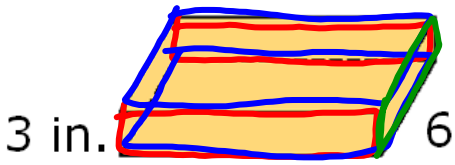
Side: $7 \times 5 = 35 \longrightarrow 35 \times 2 = 70$

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

The surface area is 286 cm^2.

286

May 31-9:11 AM



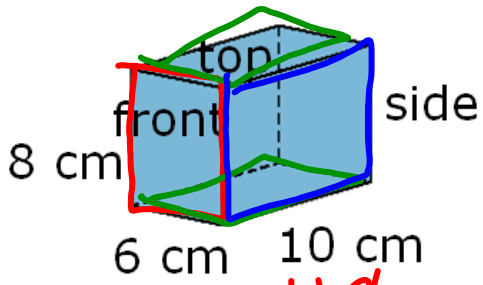
Front: $11 \cdot 3 = 33$ x 2 = 66

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



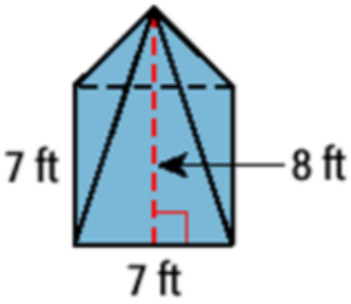
Front: $6 \cdot 8 = 48$ x 2 = 96

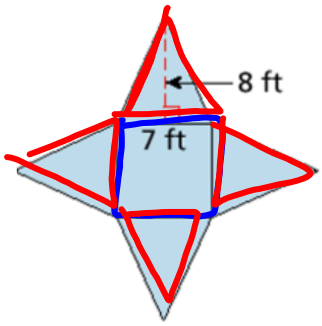
Top: $10 \cdot 6 = 60$ x 2 = 120

Side: $10 \cdot 8 = 80$ x 2 = 160

Surface Area: Total of all areas= $376\ cm^2$

May 31-9:12 AM



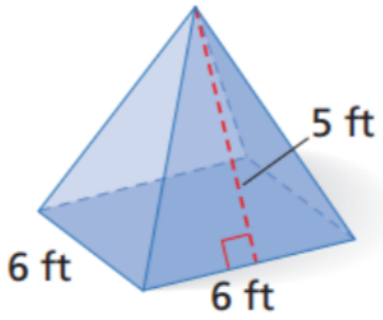


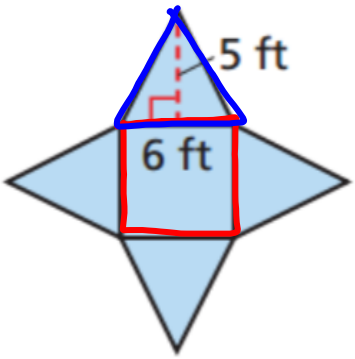
Base: $7 \cdot 7 = 49$ = 49

Side: $7 \cdot 8 = 56 \div 2 = 28$ x 4 = 112

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

May 31-9:12 AM



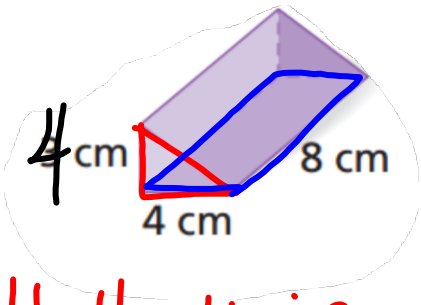


Base: $6 \cdot 6 = 36$ = 36

Side: $5 \cdot 6 = 30 \div 2 = 15$ x 4 = 60

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

May 31-9:25 AM



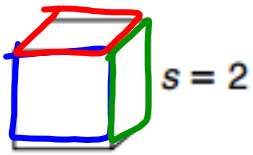
Base: $4 \cdot 4 = 16 \div 2 = 8$ x 2 = 16

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

Surface Area: Total of all areas= $112 cm^2$

May 31-9:26 AM

Find the surface area.



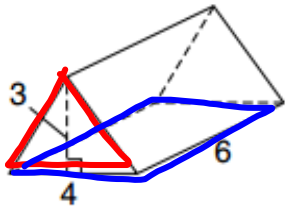
Front: $2 \cdot 2 = 4$ x 2 = 8

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

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

Surface Area: Total of all areas= 24 units^2

May 31-9:26 AM

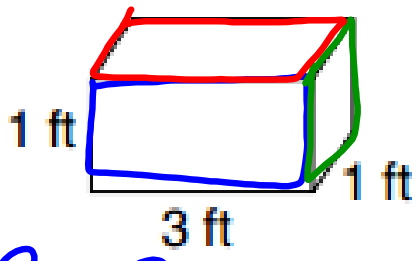


Base: $4 \cdot 3 = 12 \div 2 = 6$ x 2 = 12

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

Surface Area: Total of all areas= 84 units^2

May 31-9:26 AM



$1 \cdot 3 = 3$ 6

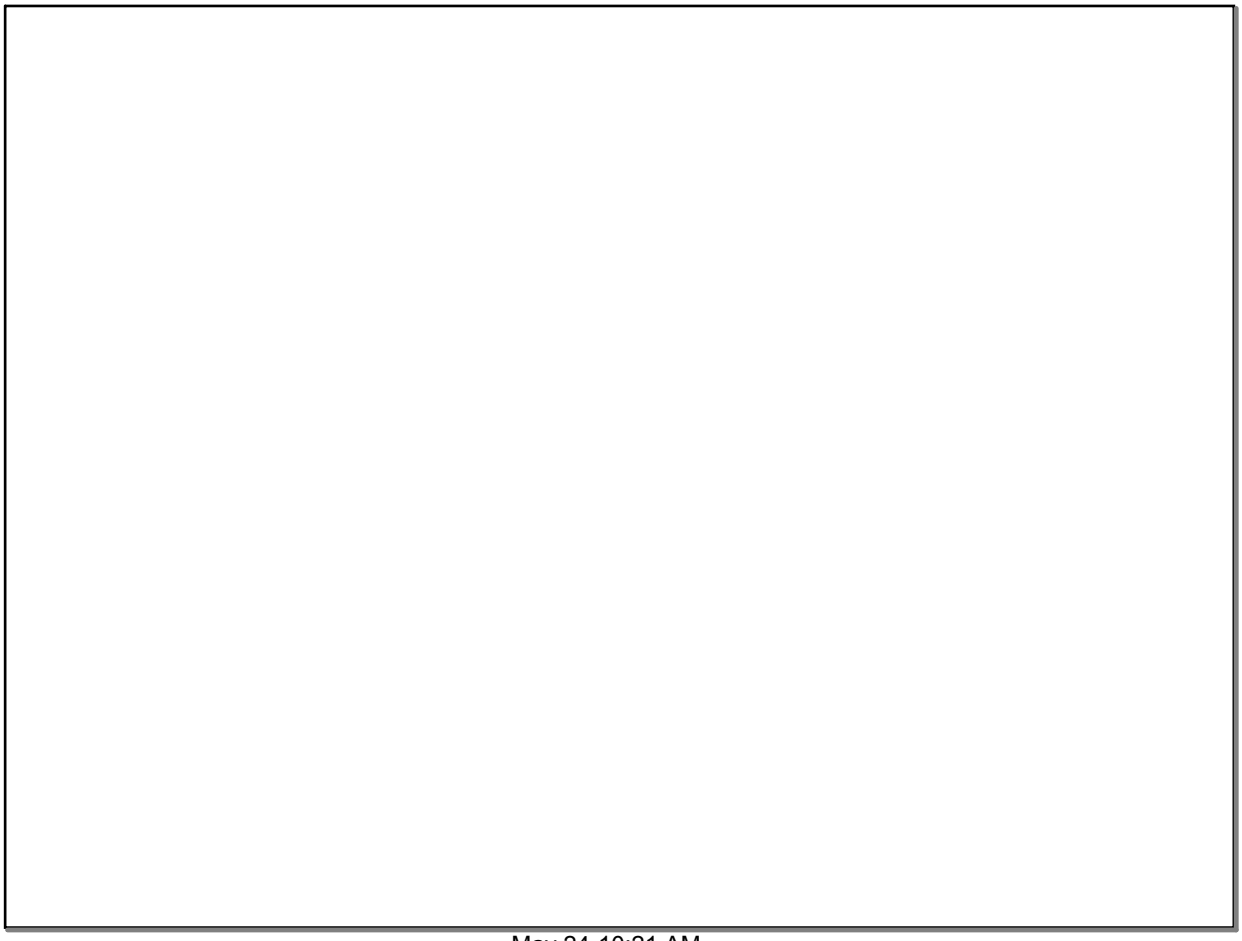
Front: $1 \cdot 1 = 1$ x 2 = 2

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

Side: _____ x 2 = 14 ft^2

Surface Area: Total of all areas= _____

May 31-9:27 AM



May 24-10:21 AM