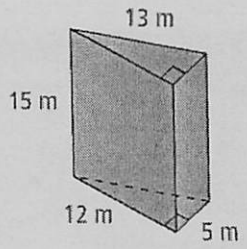
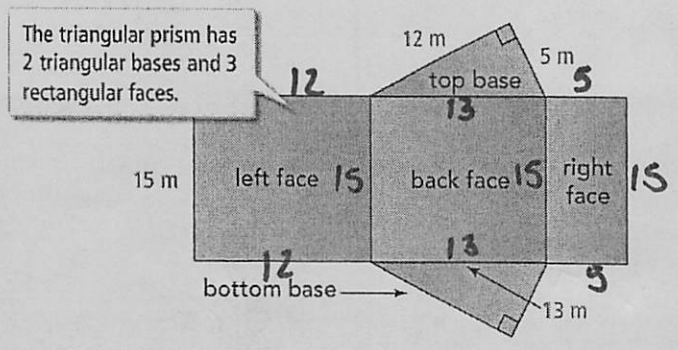
Example:

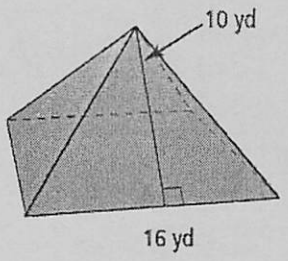
3. Find the Surface Area of the Triangular Prism.

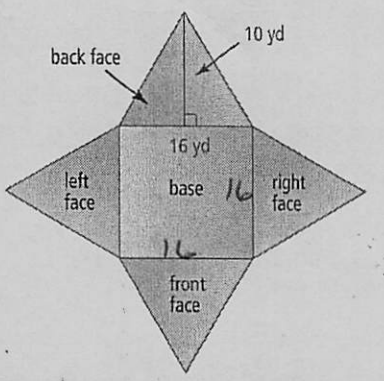




Left Face	Back Face	Right Face
$A = b \cdot h$ $A = 15 \cdot 12$ $A = 180\ m^2$	$A = b \cdot h$ $A = 13 \cdot 15$ $A = 195\ m^2$	$A = b \cdot h$ $A = 5 \cdot 15$ $A = 75\ m^2$
Top Base	**Bottom Base**	**Total Surface Area:**
$A = \frac{b \cdot h}{2}$ $A = \frac{5 \cdot 12}{2}$ $A = 30\ m^2$	$= 30\ m^2$	$510\ m^2$

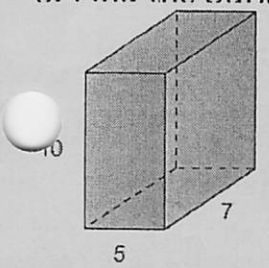
4. Find the Surface Area of the Square Pyramid.

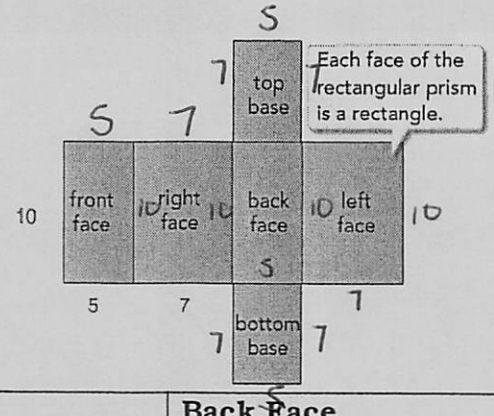




Front Face	Back Face	Right Face
$80\ yds^2$	$A = \frac{b \cdot h}{2}$ $= A = \frac{16 \cdot 10}{2}$ $A = 80\ yds^2$	$= 80\ yds^2$
Left Face	**Base**	**Total Surface Area:**
$80\ yds^2$	$A = b \cdot h$ $A = 16 \cdot 16$ $A = 256\ yds^2$	$576\ yds^2$

5. Find the Surface Area of the Rectangular Prism.

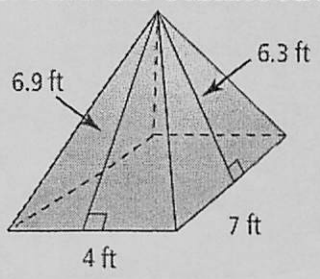


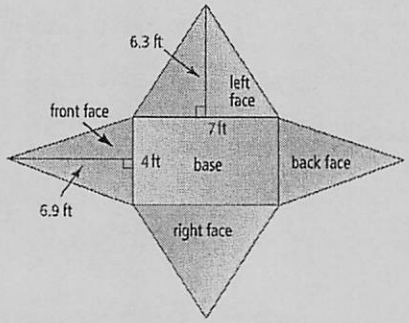


Front Face	Right Face	Back Face
$A = b \cdot h$ $A = 10 \cdot 5$ $A = 50$	$A = b \cdot h$ $A = 10 \cdot 7$ $A = 70$	$A = b \cdot h$ $A = 10 \cdot 5$ $A = 50$
Top Base	**Bottom Base**	**Left Base**
$A = b \cdot h$ $A = 5 \cdot 7$ $A = 35$	$A = b \cdot h$ $A = 5 \cdot 7$ $A = 35$	$A = b \cdot h$ $A = 10 \cdot 7$ $A = 70$

Total Surface Area: $\boxed{310}$

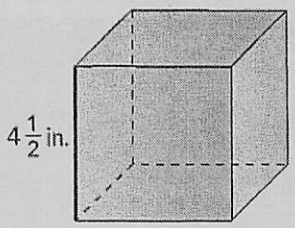
6. Find the Surface Area of the Rectangular Pyramid.

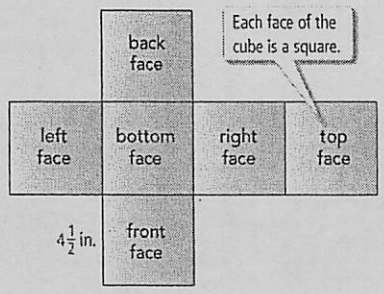




Front Face	Right Face	Back Face
$A = \frac{b \cdot h}{2}$ $A = \frac{4 \cdot 6.9}{2}$ $A = 13.8\ ft^2$	= Left Face $A = 22.05\ ft^2$	= Front Face $A = 13.8\ ft^2$
Left Face	**Base**	**Total Surface Area:**
$A = \frac{b \cdot h}{2}$ $A = \frac{7 \cdot 6.3}{2}$ $A = 22.05\ ft^2$	$A = b \cdot h$ $A = 7 \cdot 4$ $A = 28\ ft^2$	$\boxed{99.7\ ft^2}$

7. Find the Surface Area of the Cube

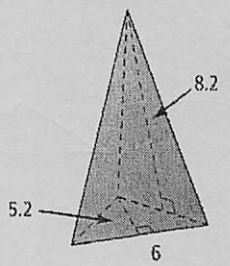


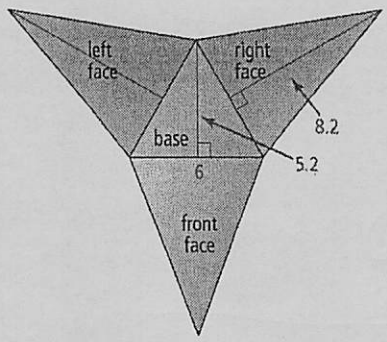


Front Face	Left Face	Back Face
$A = b \cdot h$ $A = 4\frac{1}{2} \cdot 4\frac{1}{2}$ $A = \frac{9}{2} \cdot \frac{9}{2}$ $A = \frac{81}{4} = 20\frac{1}{4}$ in^2	$= 20\frac{1}{4}\ in^2$	$= 20\frac{1}{4}\ in^2$
Bottom Face	**Right Face**	**Top Face**
$= 20\frac{1}{4}\ in^2$	$= 20\frac{1}{4}\ in^2$	$= 20\frac{1}{4}\ in^2$

Total Surface Area: $20\frac{1}{4} \cdot 6$ $\frac{81}{\cancel{4}_2} \cdot \frac{\cancel{6}^3}{1} = \frac{243}{2} = \boxed{121\frac{1}{2}\ in^2}$

8. Find the Surface Area of the Regular Triangular Pyramid.





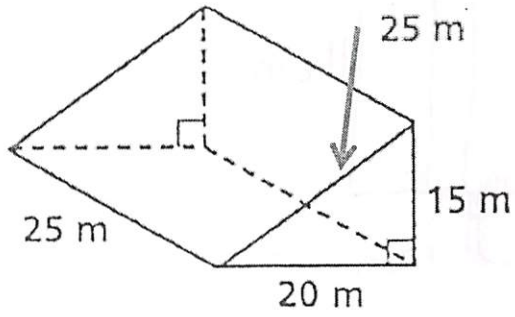
Left Face	Right Face	Front Face
$A = 24.6$	$A = \frac{b \cdot h}{2}$ $= A = \frac{6 \cdot 8.2}{2}$ $A = 24.6$	$= A = 24.6$
Base		**Total Surface Area:**
$A = \frac{b \cdot h}{2}$ $A = \frac{6 \cdot 5.2}{2}$ $A = 15.6$		$\boxed{89.4}$

Surface Area Practice

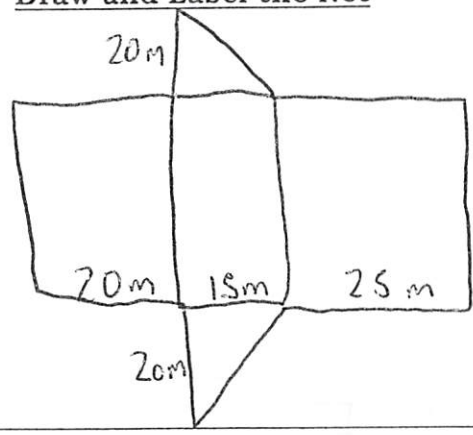
Name Key

This is an Example. Your Work Should Look Just as Organized and Complete as Mine!!

1. Find the Surface Area

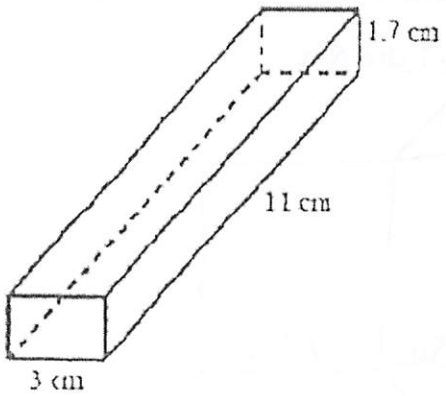


Draw and Label the Net

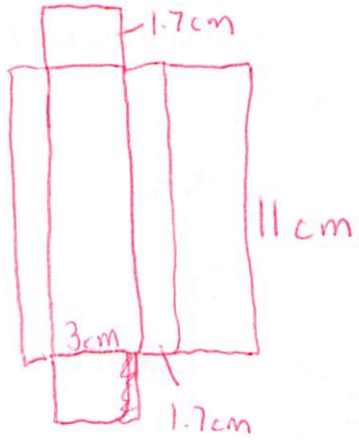


2 Δ Bases: $A = \frac{b \cdot h}{2}$ A = ? b = 15 m h = 20 m $A = \frac{15 \cdot 20}{2}$ A = 150 x 2 Δ's	= 300 m²
Bottom A = b · h A = ? B = 20 m h = 25 m A = 20 · 25 A = 500 m²	Right Face A = b · h A = ? b = 15 m h = 25 m A = 15 · 25 A = 375 m²
Left Face A = b · h A = ? b = 25 m h = 25 m A = 25 · 25 A = 625 m²	Surface Area 300 + 500 + 375 + 625 = 1800 m²

2. Find the Surface Area



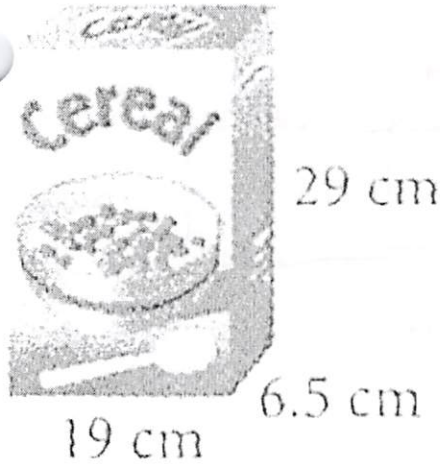
Draw and Label the Net

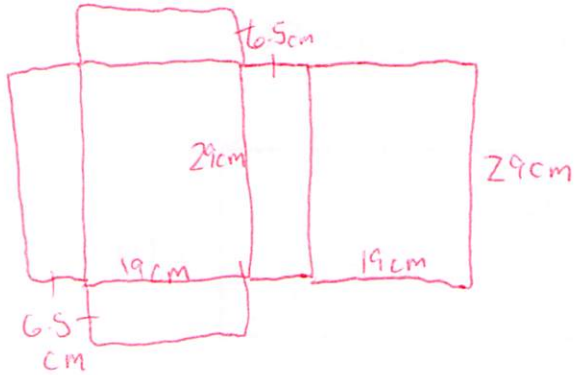


Front / Back ▭ A = ? b = 3 cm h = 1.7 cm A = b·h A = (3 cm)(1.7 cm) A = 5.1 cm² x 2 ▭'s	= 10.2 cm²
Top / Bottom ▭ A = ? b = 3 cm h = 11 cm A = b·h A = (3 cm)(11 cm) A = 33 cm x 2 ▭'s	66 cm²
Left / Right ▭ A = ? b = 11 cm h = 1.7 cm A = b·h A = (11 cm)(1.7 cm) A = 18.7 cm x 2 ▭'s = 37.4 cm²	Surface Area 10.2 + 66 + 37.4 113.6 cm²

3. Find the Surface Area

Draw and Label the Net





Front / Back ▭ A = ? b = 19 cm h = 29 cm A = b·h A = (19 cm)(29 cm) A = 551 cm² ×2 ▭'s =	1102 cm²
Top / Bottom ▭ A = ? b = 6.5 cm h = 19 cm A = b·h A = (6.5 cm)(19 cm) A = 123.5 cm² ×2 ▭'s =	247 cm²
Right / Left ▭ A = ? b = 6.5 cm h = 29 cm A = b·h A = (6.5 cm)(29 cm) A = 188.5 cm² × 2 ▭'s =	377 cm²

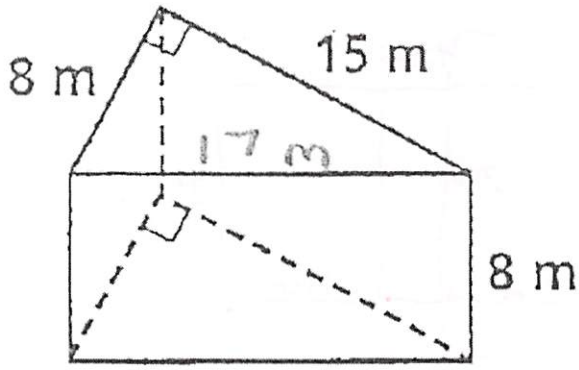
Surface Area

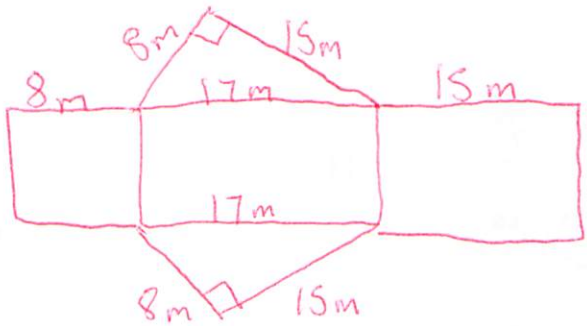
1102 + 247 + 377

1726 cm²

4. Find the Surface Area

Draw and Label the Net





Top / Bottom Δ's

A = ?

b = 8 m

h = 15 m

$A = \frac{b \cdot h}{2}$

$A = \frac{(8\,m)(15\,m)}{2}$

A = 60 m² × 2 Δ's 120 m²

Front □:

A = ?

b = 12 m

h = 8 m

A = b·h

A = (12 m)(8 m)

A = 136 m²

Left □:

A = ?

b = 8 m

h = 8 m

A = b·h

A = (8 m)(8 m)

A = 64 m²

Right □:

A = ?

b = 15 m

h = 8 m

A = b·h

A = (15 m)(8 m)

A = 120 m²

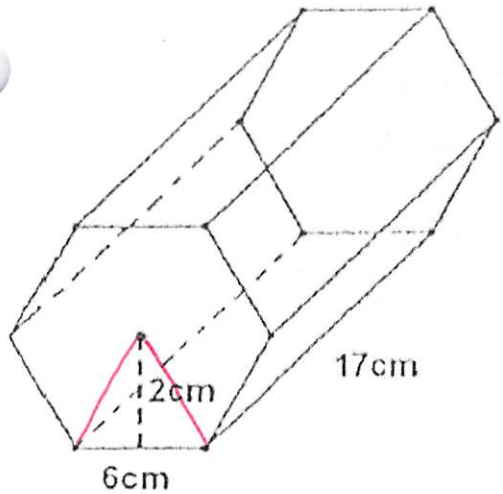
Surface Area

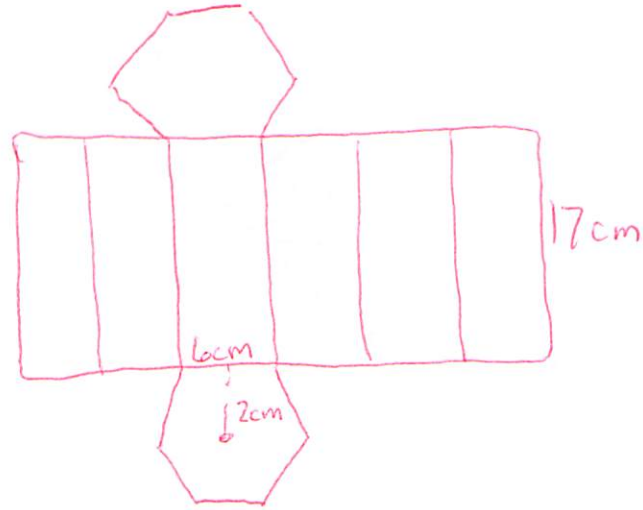
~~120~~ 120 + 136 + 64 + 120

440 m²

5. Find the Surface Area of the Regular Hexagonal Prism

Draw and Label the Net





2 Hexagon Bases 6 Δ's

A = ?

b = 6 cm

h = 2 cm

$A = \frac{b \cdot h}{2}$

$A = \frac{(6cm)(2cm)}{2}$

A = 6 cm × 6 Δ's = 36 cm² × 2 ⬡'s = 72 cm²

6 Rectangles

A = ?

b = 17 cm

h = 6 cm

A = b · h

A = (17 cm)(6 cm)

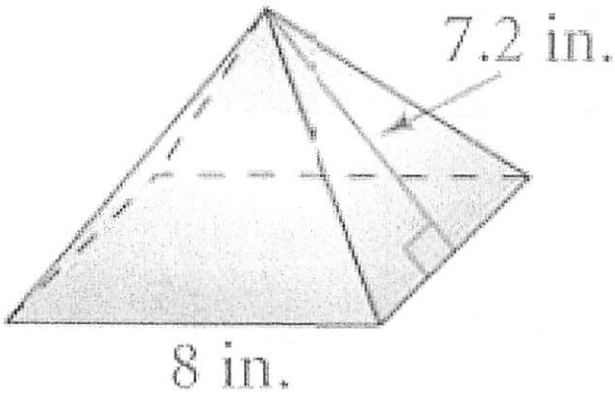
A = 102 cm² × 6 ▭'s = 612 cm²

Surface Area

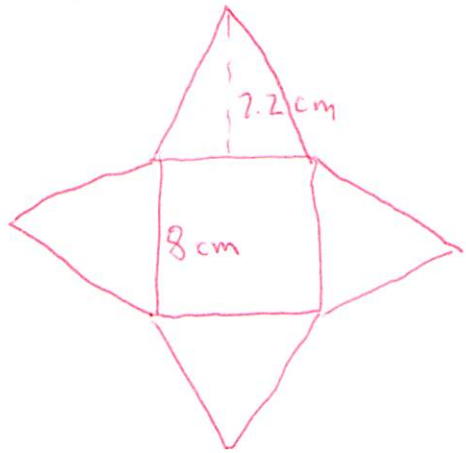
72 + 612

684 cm²

6. Find the Surface Area of the Square Pyramid



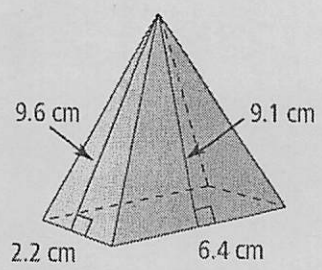
Draw and Label the Net



Square Base A = ? b = 8 in h = 8 in $A = b \cdot h$ $A = (8\text{ in})(8\text{ in})$ $A = 64\text{ in}^2$	
4 ≅ triangles A = ? b = 8 in h = 7.2 in $A = \frac{b \cdot h}{2}$ $A = \frac{(8\text{ in})(7.2\text{ in})}{2}$ $A = 28.8\text{ in}^2 \times 4\ \Delta\text{'s} = 115.2$	
Surface Area 64 + 115.2 179.2 in^2	

Example

Find the surface area of the rectangular pyramid to the nearest square centimeter.



Left and Right Face

$A = \frac{b \cdot h}{2}$

$A = \frac{2.2 \cdot 9.6}{2}$

$A = 10.56\ cm^2 \times 2 = \underline{\underline{21.12\ cm^2}}$

Front and Back Face

$A = \frac{b \cdot h}{2}$

$A = \frac{6.4 \cdot 9.1}{2}$

$A = 29.12\ cm^2 \times 2 =$

$\underline{\underline{58.24\ cm^2}}$

Base:

$A = b \cdot h$

$A = 2.2 \cdot 6.4$

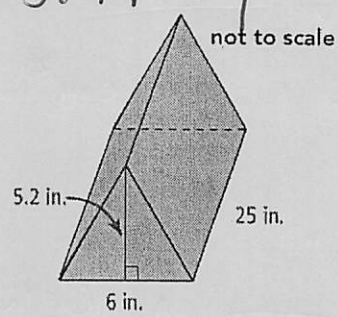
$A = \underline{\underline{14.08\ cm^2}}$

$$\begin{array}{r} 21.12 \\ 58.24 \\ +\ 14.08 \\ \hline \end{array}$$

$SA = 93.44\ cm^2$

Example

The mailing package has the shape of a regular triangular prism. Find how many square inches of cardboard it takes to make the mailing package. Round your answer to the nearest square inch.



Rectangular Faces x 3

$A = b \cdot h$

$A = 25 \cdot 6$

$A = 150\ in^2 \times 3 = \underline{\underline{450\ in^2}}$

$$\begin{array}{r} 450 \\ +\ 31.2 \\ \hline \end{array}$$

$\boxed{481.2\ in^2}$

Triangle Bases x 2

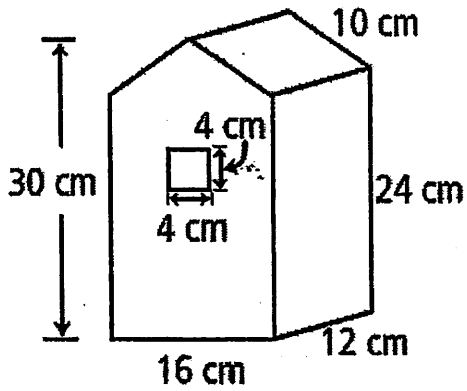
$A = \frac{b \cdot h}{2}$

$A = \frac{6 \cdot 5.2}{2}$

$A = 15.6\ in^2 \times 2 = \underline{\underline{31.2\ in^2}}$

Challenge:

You plan to build a birdhouse with one square doorway as shown. How many square centimeters of wood do you need to make the birdhouse?



Bottom

$16 \cdot 12 = \underline{192 \text{ cm}^2}$

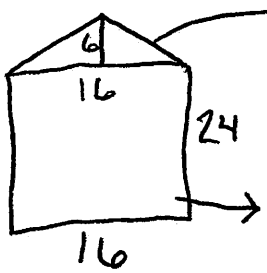
Sides x2

$12 \cdot 24 = 288 \text{ cm}^2 \times 2 = \underline{576 \text{ cm}^2}$

Roof x2

$12 \cdot 10 = 120 \text{ cm}^2 \times 2 = \underline{240 \text{ cm}^2}$

Back



$A = \frac{6 \cdot 16}{2} = 48 \text{ cm}^2$

$A = 16 \cdot 24 = 324 \text{ cm}^2$

$+$

$\underline{432 \text{ cm}^2}$

Surface Area

1856 cm^2

Front

$432 \text{ cm}^2 - 16 \text{ cm}^2 = \underline{416 \text{ cm}^2}$