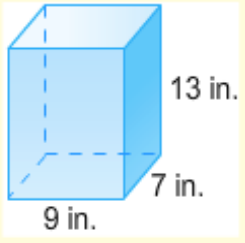
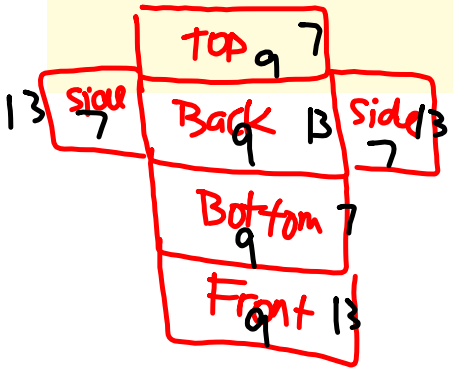
L8-6 Surface Area of Prisms

1. Find the surface area of the rectangular prism shown at the right.





Area of ea. individual face

Top & Bottom = $2(9 \cdot 7) = 126\ in^2$

Front & Back = $2(9 \cdot 13) = 234\ in^2$

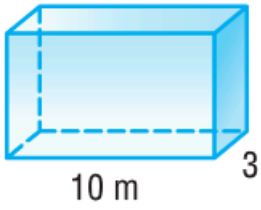
Sides = $+\ 2(13 \cdot 7) = 182\ in^2$

$542\ in^2$

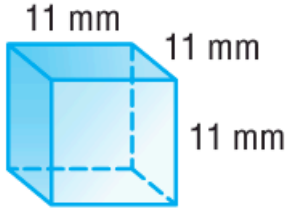
Got It? Do these problems to find out.

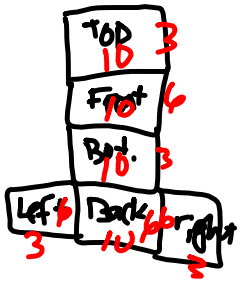
Find the surface area of each rectangular prism.

a.



b.





Top & Bottom $= 2(3 \cdot 10) =$ $60 m^2$

Front & Back $= 2(6 \cdot 10) =$ $120 m^2$

Sides $= 2(3 \cdot 6) =$ $36 m^2$

\+

$216 m^2$

6 faces that are the same size

$\therefore 6(11 \cdot 11) =$

$6(121) =$

$726 mm^2$

2. Domingo built a toy box 60 inches long, 24 inches wide, and 36 inches high. He has 1 quart of paint that covers about 87 square feet of surface. Does he have enough to paint the toy box? Justify your answer.

① Draw & label net

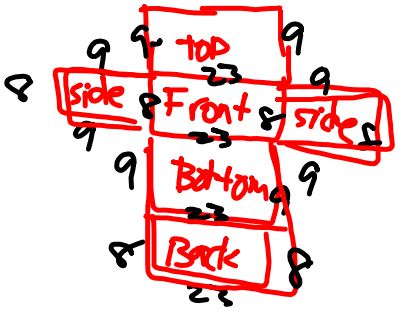
② Build table w/ values for area of faces

③ Total values in table

④ Compare total SA. to the area the qt. of paint covers.

Got It? Do this problem to find out.

c. The largest corrugated cardboard box ever constructed measured about 23 feet long, 9 feet high, and 8 feet wide. Would 950 square feet of paper be enough to cover the box? Justify your answer.



Top/Bottom $= 2(9 \cdot 23) = 414$

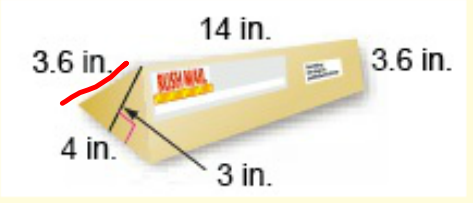
Front/Back $= 2(8 \cdot 23) = 368$

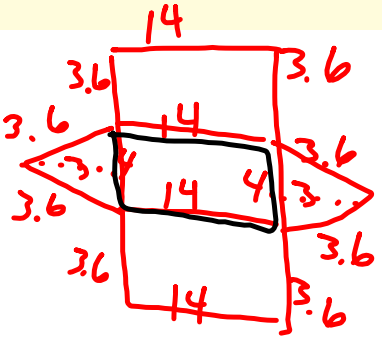
Sides $= 2(8 \cdot 9) = +\ 144$

$926\ ft^2$

$950 > 926$ ∴ we have enough cardboard.

3. Marty is mailing his aunt the package shown. How much cardboard is used to create the shipping container?





slanted rectangles $= 2(14 \cdot 3.6) = 100.8$

bottom rectangle $= 14 \cdot 4 = 56$

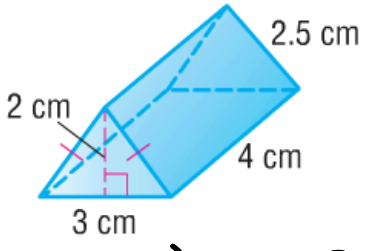
Triangles $= 2\left(\frac{4 \cdot 3}{2}\right) = 12$

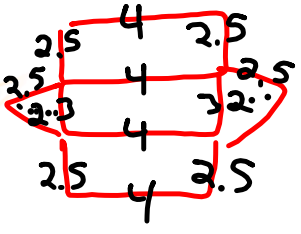
each triangle

$168.8\ in^2$

Got It? Do this problem to find out.

d. Find the surface area of the triangular prism.





slanted rectangles $= 2(4 \cdot 2.5) = 20$

bottom rectangle $= 1(4 \cdot 3) = 12$

triangles $= 2\left(\frac{2 \cdot 3}{2}\right) = 6$

$20 + 12 + 6 = 38 \text{ cm}^2$

February 17, 2015