Problem of the Day: Find the lateral surface area of the figure.

Plan for the Day: Integer quiz (if needed)
Collect homework, restroom passes, and signed tests (due tomorrow)
Notes on surface area of triangular prisms
Work on color match - due tomorrow
Objective: We will be able to find the surface area of triangular prisms.
Good luck football and volleyball at home!!

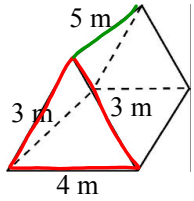
Triangular prisms have the same formula for lateral surface area as rectangular prisms.

$$S = Ph$$

where P is the perimeter of the base and h is the height of the prism.

Since your base is a triangle, the perimeter will consist of only 3 measurements.

Example 1: Find the lateral surface area of the prism.



LSA = Ph
$10 \cdot 5$
3
4
+3
10=P
LSA=50 m^2

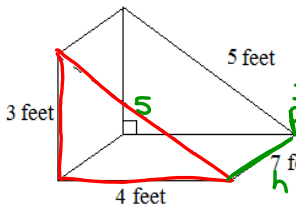
Triangular prisms have the same formula for total surface area as rectangular prisms.

$$S = \underline{Ph} + 2B$$

(LSA)

where P is the perimeter of the base, h is the height, and B is the area of the base.

Example 2: Find the total surface area of the object below.



SA = Ph + 2B $B = \frac{1}{2}bh$
$12 \cdot 7 + 2 \cdot \frac{1}{2} \cdot 3 \cdot 4$
3
4
+5
P=12
84 + 12
SA=96 ft^2

B = area of the base

Area of a triangle = 1/2bh (*note that this height is the height of the triangle, which is at a right angle, not the height of the prism*)

Since you are multiplying 2B, 2 * 1/2 = 1, so we can rewrite our formula to be S = Ph + B, where B = bh.

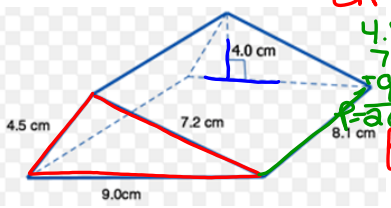
Example 3:
Toblerone makes chocolate bars in the shape of equilateral triangular prisms. Find the amount of cardboard needed to cover the candy bar.

$SA = Ph + 2B$ $B = \frac{1}{2}bh$

10
10
+10
30 = P

$3021 + 8 \cdot 10$
$630 + 80$
$SA = 710\,cm^2$

Example 4: Find the surface area of the following object.



$SA = Ph + 2B$ $B = \frac{1}{2}bh$

4.5
7.2
+9.0
$P = 20.7$

$20.7 \cdot 8.1 + 9.4$
$167.67 + 36$
$SA = 203.67\,cm^2$