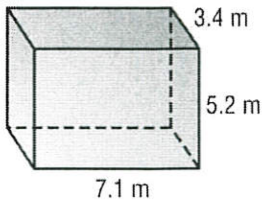
6th Grade
Math

Name Key

Chapter 10 Practice Test

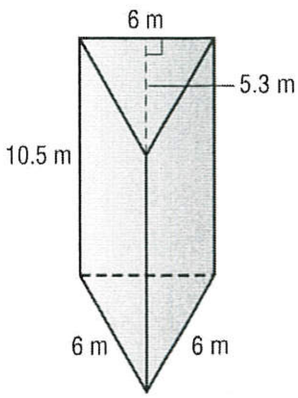
Find the volume of each prism

1.



$V = (3.4)(5.2)(7.1)$
$= 125.528\ m^3$

2.

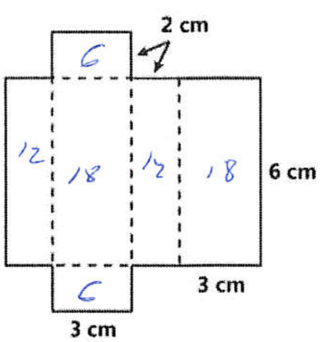


$V = \frac{1}{2}(6)(5.3)(10.5)$
$= (15.9)(10.5)$

$166.95\ m^3$

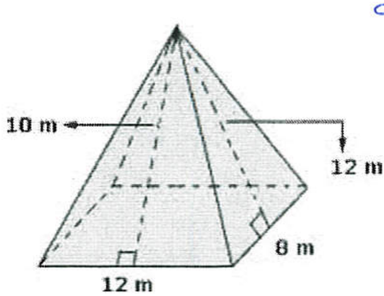
Find the surface area of each figure

$12 + 24 + 36 =$



$= 72\ cm^2$

3.



$2[\frac{1}{2}(12)(10)] = 120$
$2[\frac{1}{2}(8)(12)] = 96$
$(12)(8) = 96$

$312\ m^2$

4.

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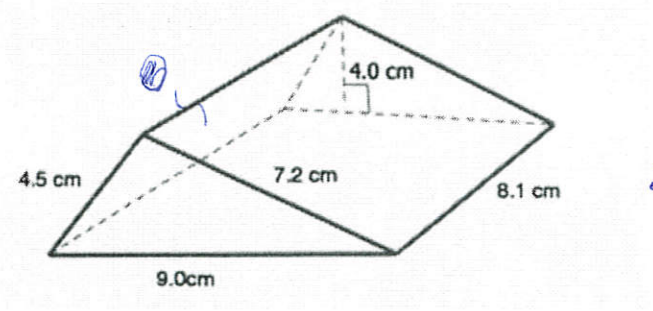
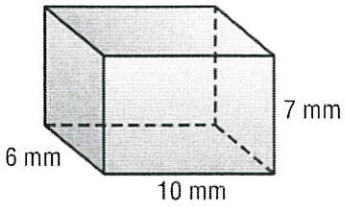
5.



$(4.5)(8.1) = 36.45$
$(7.2)(8.1) = 57.32$
$(9.0)(8.1) \approx 72.90$
$2\left[\frac{1}{2}(9)(4)\right] = 36$

203.67 cm²

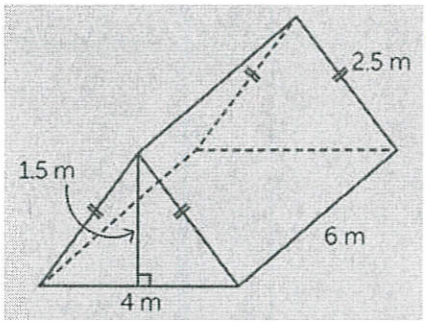
6.



$2(6)(10) = 120$
$2(6)(7) = 84$
$2(7)(10) = 140$

344 mm²

7.



$2\left[\frac{1}{2}(4)(1.5)\right] = 6$
$2[(2.5)(6)] = 30$
$(6)(4) = 24$

60 m²

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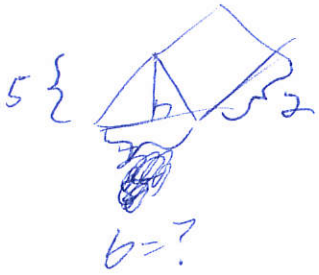
8. A gift box in the shape of a triangular prism has a volume of 35 cubic inches, a base height of 5 inches, and a height of 2 inches. What is the length of the base?



$V = 35$

$V = \frac{1}{2}(bh)h$ (base height, height)

$35 = \frac{1}{2}(b)(5)(2)$

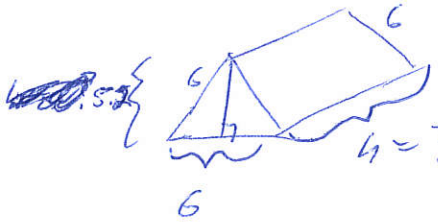
$35 = 5b$

$b = 7$

9. A special box designed to hold an antique artifact is shaped like a triangular prism. The surface area of the box is 121.2 square inches. The height of the base triangle is 5.2 inches and each side of the base triangle is 6 inches long. What is the height of box? (3 points)

$S.A = 121.2$

Bases: $2\left[\frac{1}{2}(6)(5.2)\right] = 6 \times 5.2 = 31.2$



Sides: $3(6h) = 18h$ (all 3 sides are the same.)

(Total surface area) = (2 bases) + (3 lateral sides)

$121.2 = 31.2 + 18h$

$-31.2 \quad -31.2$

$90 = 18h$

$5 = h$

5 inches

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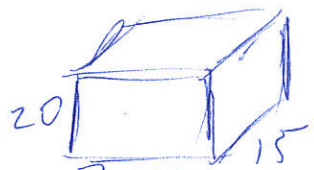
10. A room is 15 feet long, 25 feet wide, and 20 feet tall. If Mickey paints the walls and the ceiling, how much surface area will he cover?

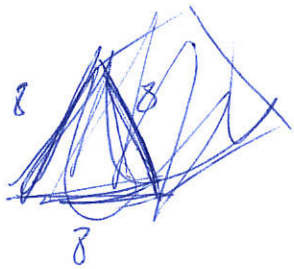


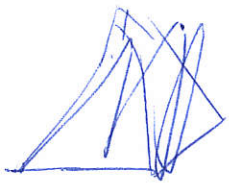
$2(20)(25) = 1000$
$2(20)(15) = 600$
$(25)(15) = 375$
1975

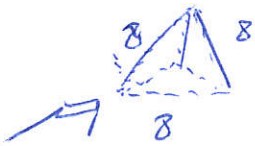
Not the floor...

1976 ft²

11. A pyramid has all sides that are equilateral triangles. Each triangle has side lengths of 8 centimeters. If the surface area of the pyramid is 67.2 square centimeters, what is the slant height of the pyramid?
(3 points)







4 equilateral triangles

"slant height"

$S.A = 4\left[\frac{1}{2}bh\right]$

$67.2 = (2)(8)(l)$

$67.2 = 16l$

$4.2 = l$

cm