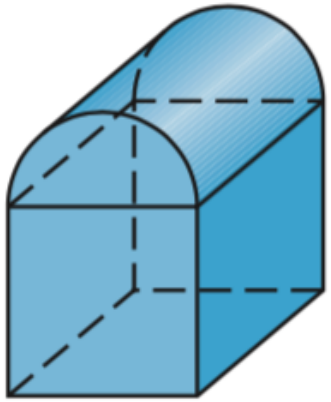
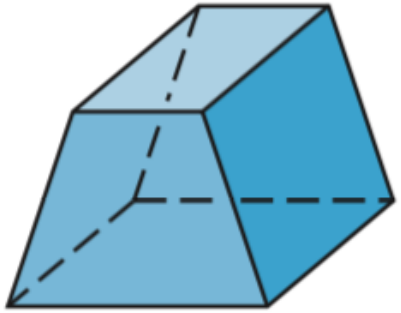
Chapter 12 Test Review

1)

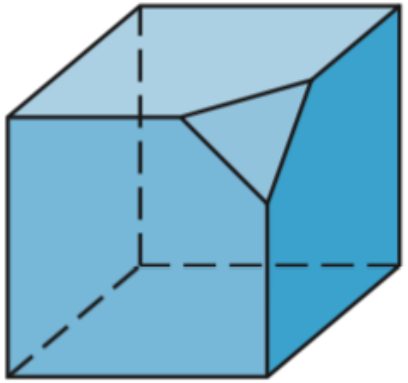
10.



11.



12.



10) No, it is not made of all polygons

11) Yes, it is made of all polygons

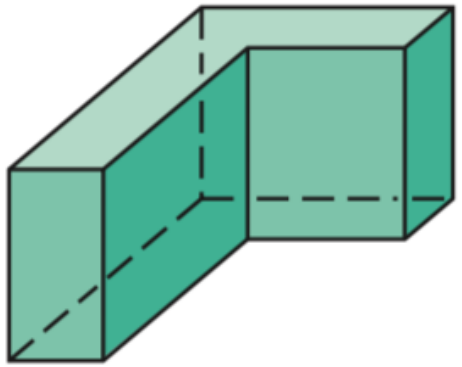
12) Yes, it is made of all polygons

2)

13.

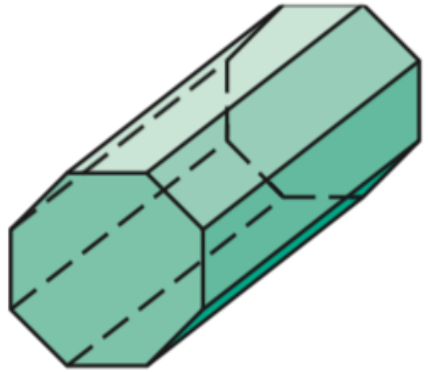
Faces: 5
Vertices: 5
Edges: 8

14.



Faces: 8
Vertices: 12
Edges: 18

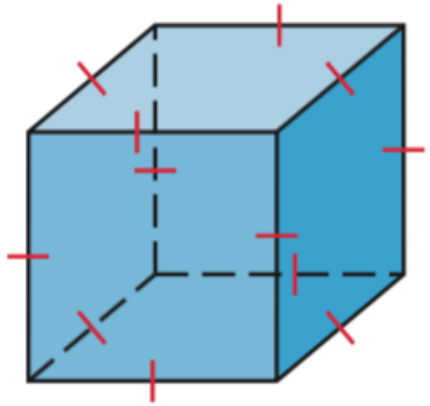
15.



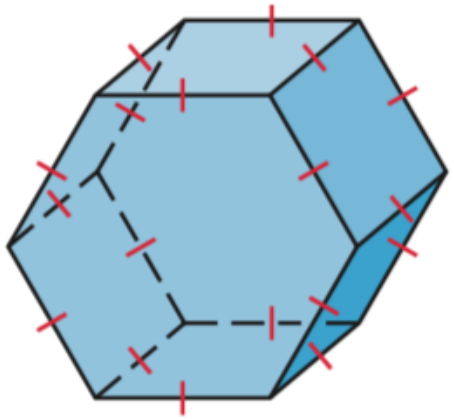
Faces: 10
Vertices: 16
Edges: 24

3)

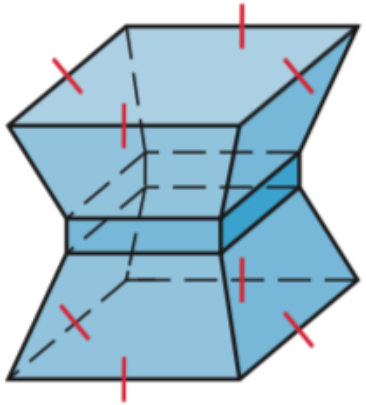
16.



17.



18.



16) Regular, convex → all faces are congruent; not “pushed” in

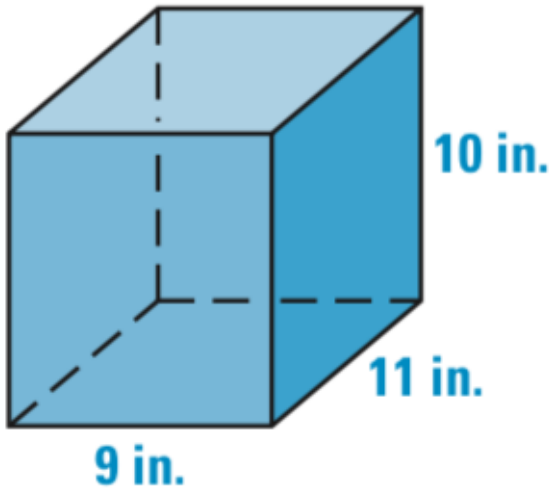
17) Not regular, convex → all faces are not congruent; not “pushed” in

18) Not regular, not convex (concave) → all faces are not congruent; “pushed” in

4)

$2lw + 2lh + 2wh$

20.

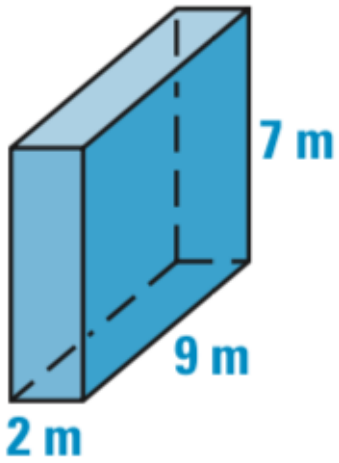


$2(9)(11) + 2(9)(10) + 2(11)(10)$

$198 + 180 + 220$

$598\ in^2$

21.



$2(2)(9) + 2(2)(7) + 2(9)(7)$

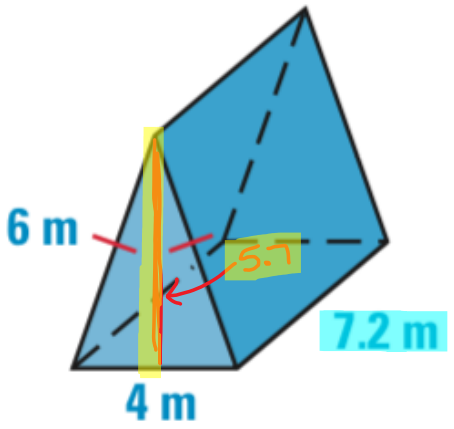
$36 + 28 + 126$

$190\ m^2$

5) height of base, height of prism

$2(\frac{1}{2}bh)+Ph$

23.



height of base:

$x^2+2^2=6^2$

$x^2+4=36$

$x^2=32$

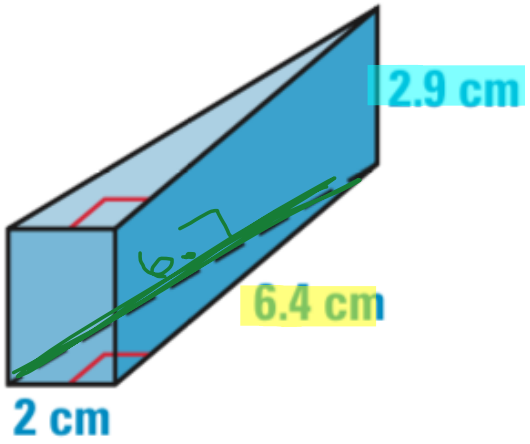
$x=5.7$

$2(\frac{1}{2}\times4\times5.7)+(4+6+6)(7.2)$

$22.8+115.2$

$138\ m^2$

24.



missing side of base for perimeter:

$2^2+6.4^2=x^2$

$4+40.96=x^2$

$44.96=x^2$

$6.7=x$

$2(\frac{1}{2}\times2\times6.4)+(2+6.4+6.7)(2.9)$

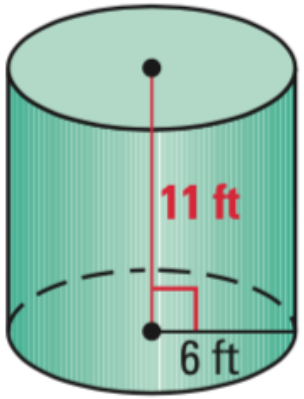
$12.8+43.79$

$56.59\ cm^2$

6)

$2\pi r^2 + 2\pi rh$

26.

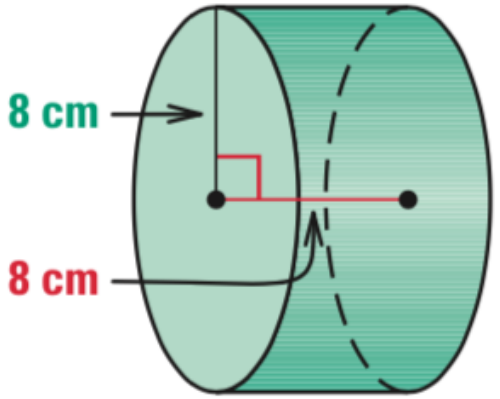


$2(3.14)(6^2) + 2(3.14)(6)(11)$

$226.08 + 414.48$

$640.56 ft^2$

27.



$2(3.14)(8^2) + 2(3.14)(8)(8)$

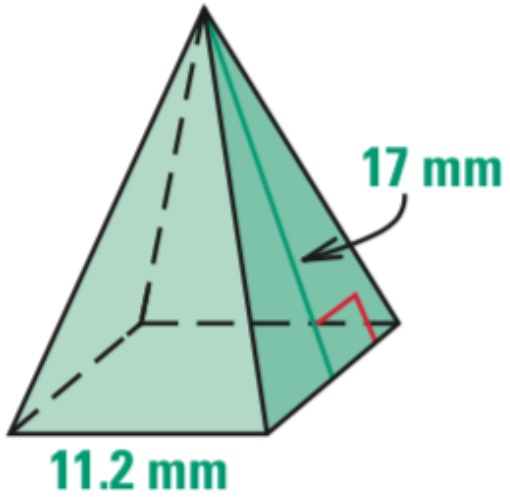
$401.92 + 401.92$

$803.84\ cm^2$

7-8)

$(b \times h) + \frac{1}{2}Pl$

17.

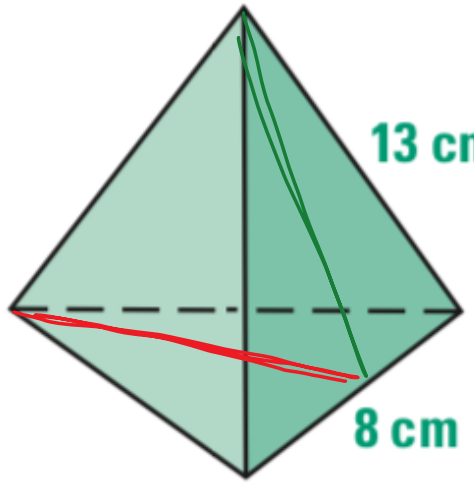


$(11.2 \times 11.2) + \frac{1}{2}(11.2 + 11.2 + 11.2 + 11.2)(17)$

$125.44 + 380.8$

$506.24\ mm^2$

18.



$(\frac{1}{2}bh) + \frac{1}{2}Pl$

h: $4^2 + x^2 = 8^2$

$16 + x^2 = 64$

$x^2 = 48$

$x = 6.9$

l: $4^2 + l^2 = 13^2$

$16 + l^2 = 169$

$l^2 = 153$

$l = 12.4$

$(\frac{1}{2} \times 8 \times 6.9) + \frac{1}{2}(8 + 8 + 8)(12.4)$

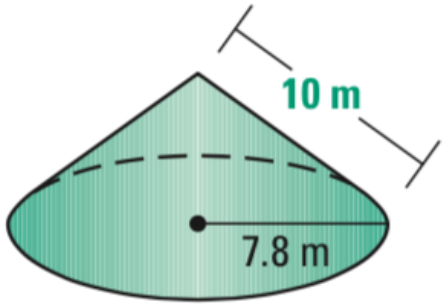
$27.6 + 148.8$

$176.4\ cm^2$

9)

$\pi r^2 + \pi r \ell$

23.

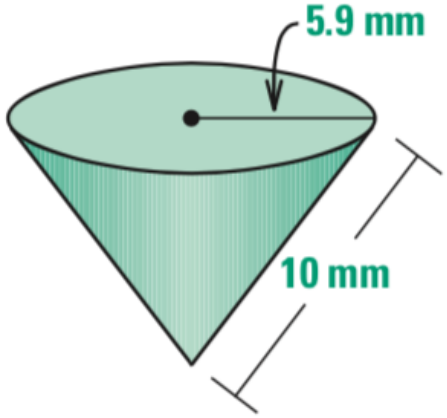


$(3.14)(7.8^2) + (3.14)(7.8)(10)$

$191.03 + 244.92$

$435.95\ m^2$

24.

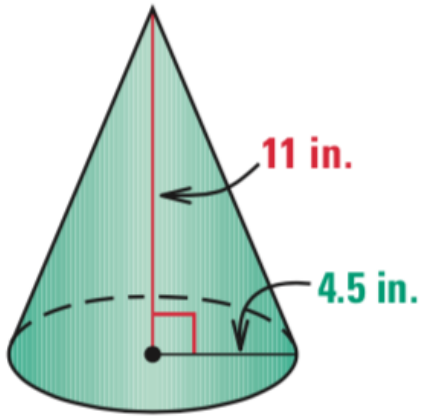


$(3.14)(5.9^2) + (3.14)(5.9)(10)$

$109.30 + 185.26$

$294.56\ mm^2$

25.



ℓ: $4.5^2 + 11^2 = \ell^2$

$20.25 + 121 = \ell^2$

$141.25 = \ell^2$

$11.9 = \ell$

$(3.14)(4.5^2) + (3.14)(4.5)(11.9)$

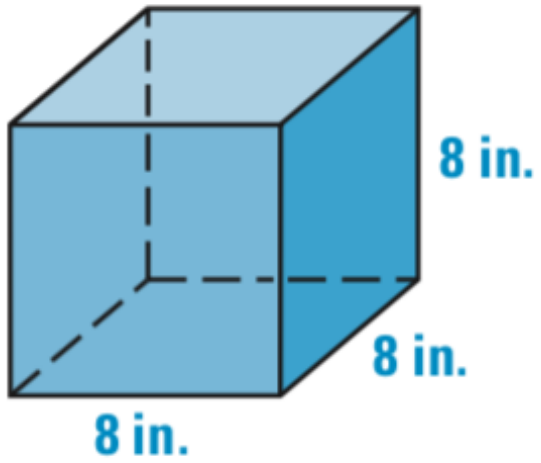
$63.59 + 168.15$

$231.74\ in^2$

10-11)

$l \times w \times h$

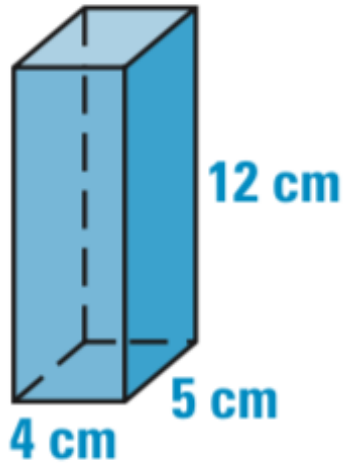
13.



$8 \times 8 \times 8$

$512\ in^3$

14.



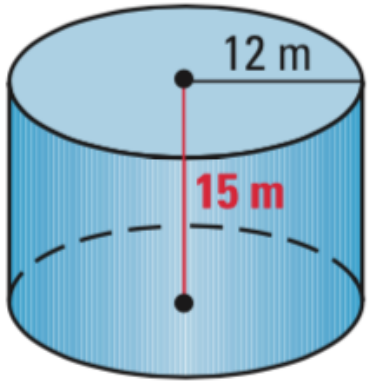
$4 \times 5 \times 12$

$240\ cm^3$

12)

$\pi r^2 h$

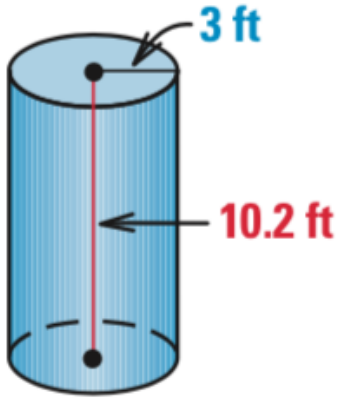
16.



$(3.14)(12^2)(15)$

$6782.4\ m^3$

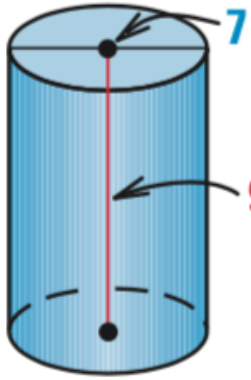
17.



$(3.14)(3^2)(10.2)$

$288.25\ ft^3$

18.



$\Rightarrow r = 3.5$

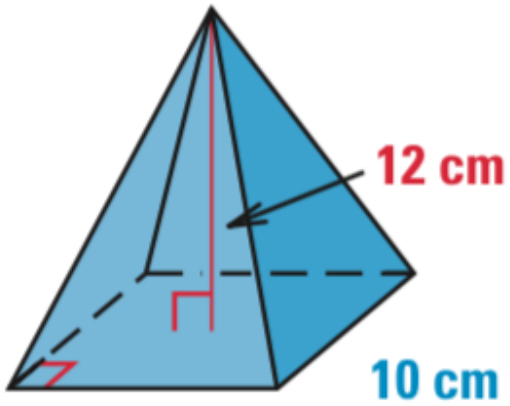
$(3.14)(3.5^2)(9.9)$

$380.80\ cm^3$

13)

$\frac{1}{3} \times l \times w \times h$

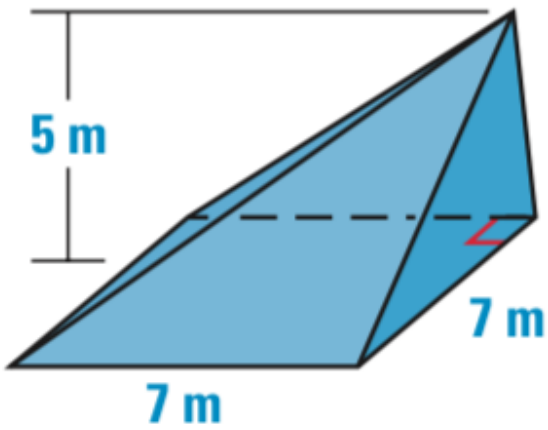
11.



$\frac{1}{3} \times 10 \times 10 \times 12$

$400\ cm^3$

12.



$\frac{1}{3} \times 7 \times 7 \times 5$

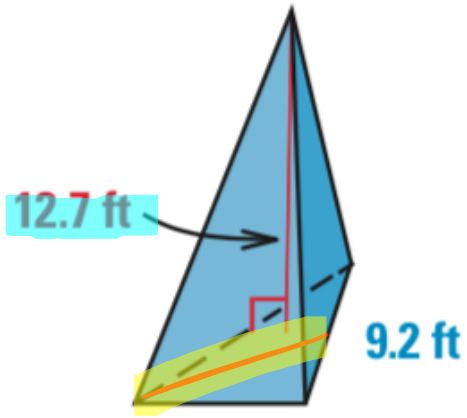
$81.67\ m^3$

14)

$\frac{1}{3}(\frac{1}{2}bh)h$

height of base — height of pyramid

13.



$h: 4.6^2 + x^2 = 9.2^2$

$21.16 + x^2 = 84.64$

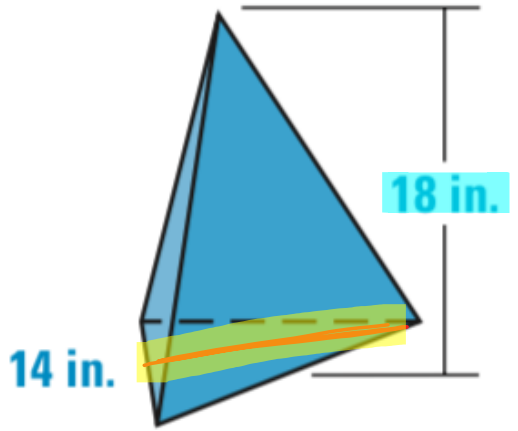
$x^2 = 63.48$

$x = 7.9$

$(1/3)(1/2 \times 9.2 \times 7.9)(12.7)$

$153.8\ ft^3$

14.



$h: 7^2 + x^2 = 14^2$

$49 + x^2 = 196$

$x^2 = 147$

$x = 12.1$

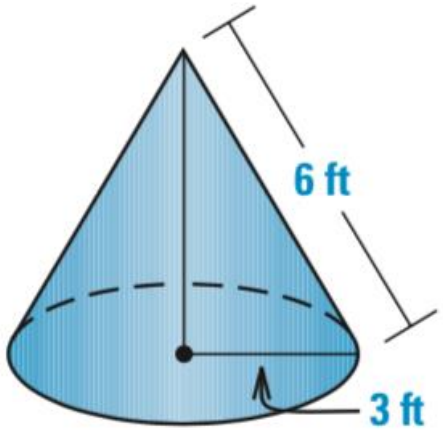
$(1/3)(1/2 \times 14 \times 12.1)(18)$

$508.2\ in^3$

15)

$\frac{1}{3}\pi r^2 h$

17.



$h: 3^2 + x^2 = 6^2$

$9 + x^2 = 36$

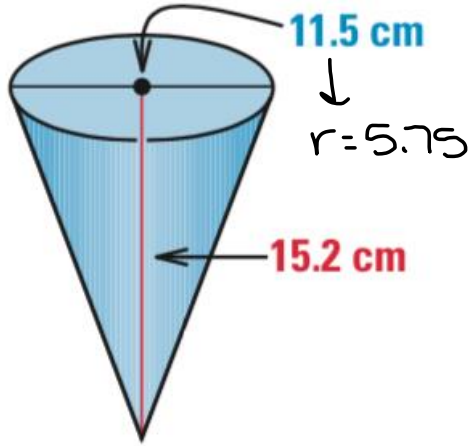
$x^2 = 27$

$x = 5.2$

$\frac{1}{3}(3.14)(3^2)(5.2)$

$48.98\ ft^3$

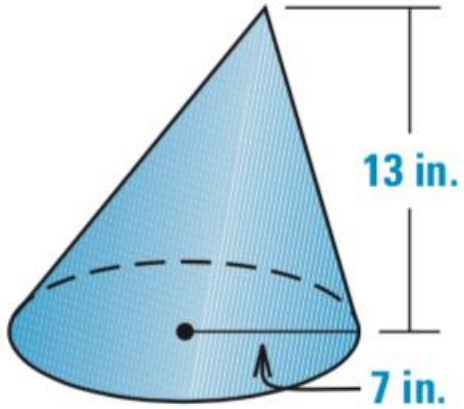
18.



$\frac{1}{3}(3.14)(5.75^2)(15.2)$

$526.00\ cm^3$

19.



$\frac{1}{3}(3.14)(7^2)(13)$

$666.73\ in^3$