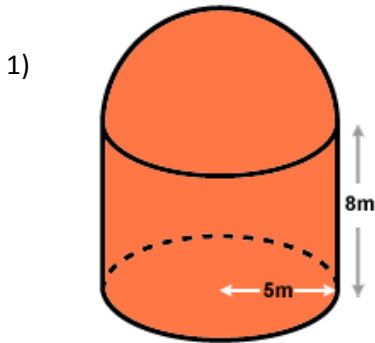


Name: _____

Worksheet surface area and volume composite solids

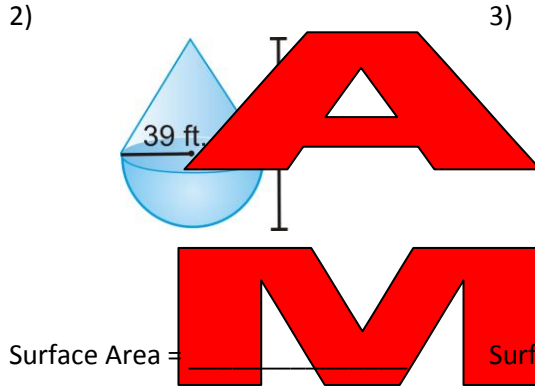
Then find the surface area and volume of each shape to the nearest tenth.

S



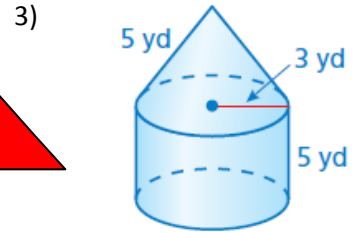
Surface Area = _____

Volume = _____



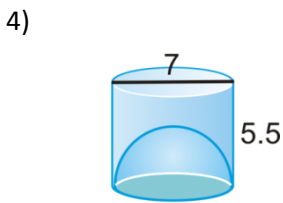
Surface Area = _____

Volume = _____



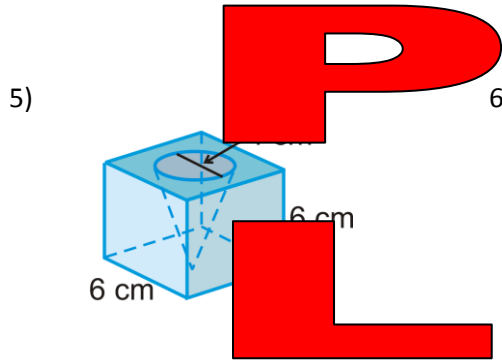
Surface Area = _____

Volume = _____



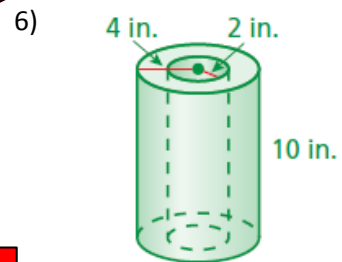
Surface Area = _____

Volume = _____



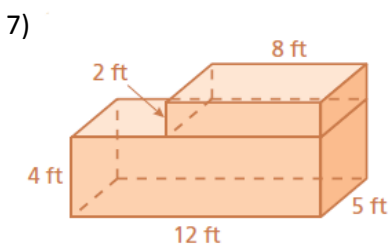
Surface Area = _____

Volume = _____



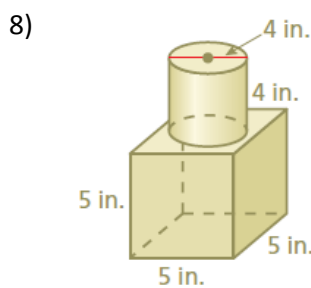
Surface Area = _____

Volume = _____



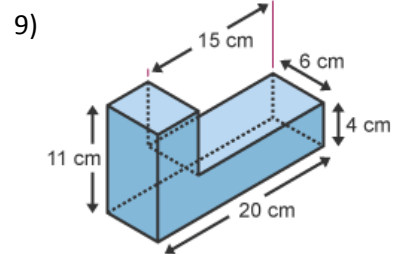
Surface Area = _____

Volume = _____



Surface Area = _____

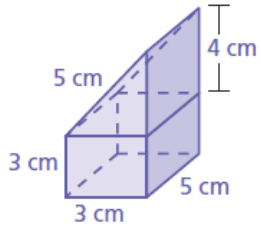
Volume = _____



Surface Area = _____

Volume = _____

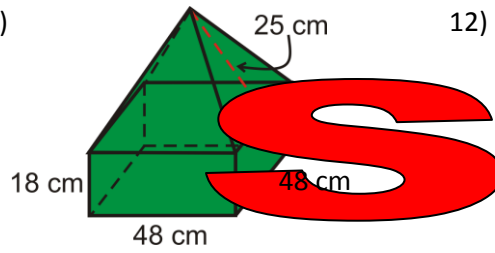
10)



Surface Area = _____

Volume = _____

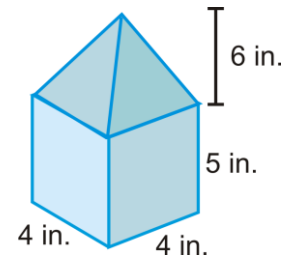
11)



Surface Area = _____

Volume = _____

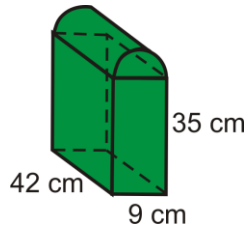
12)



Surface Area = _____

Volume = _____

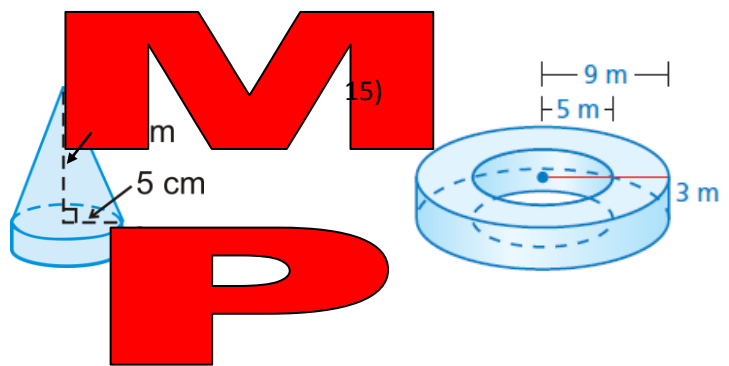
13)



Surface Area = _____

Volume = _____

14)



Surface Area = _____

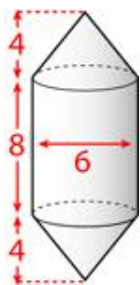
Volume = _____

15)

Surface Area = _____

Volume = _____

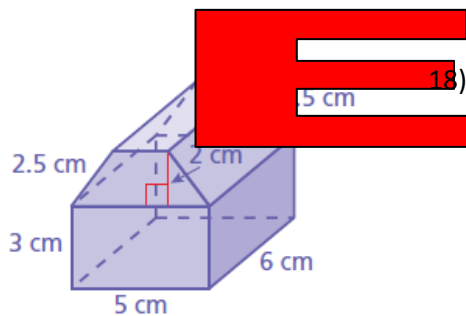
16)



Surface Area = _____

Volume = _____

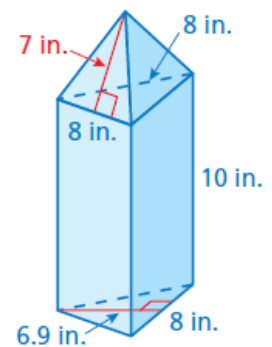
17)



Surface Area = _____

Volume = _____

18)

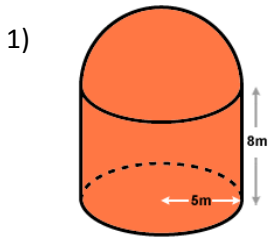


Surface Area = _____

Name: **KEY**

Worksheet surface area and volume composite solids

Then find the surface area and volume of each shape to the nearest tenth.

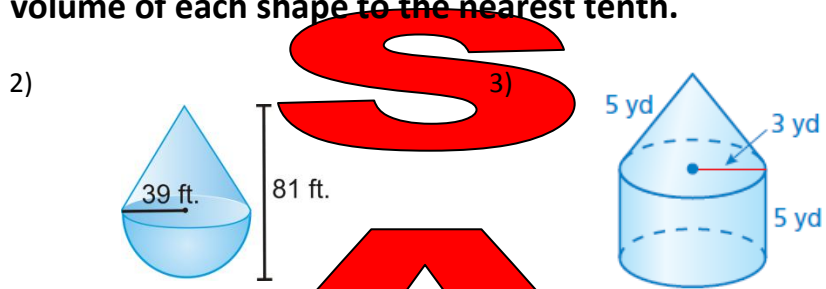


to solve: $\pi 5^2 + 2\pi 5(8) + \frac{1}{2}(4\pi 5^2)$

Surface Area = 486.9 m^2

to solve: $\pi 5^2(8) + \frac{1}{2}(\frac{4}{3}\pi 5^3)$

Volume = 890.1 m^3



to solve: $\pi(39)(\sqrt{39^2 + (81-39)^2} + \frac{1}{2}(4\pi 39^2))$ *to solve:* $\pi 3^2 + 2\pi 3(5) + \pi(3)(5)$

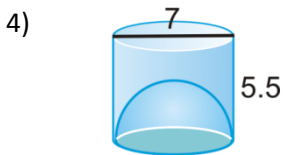
Surface Area = $16,579.1 \text{ ft}^2$

Surface Area = 169.6 yd^2

to solve: $\frac{1}{3}(\pi 39^2(81) + \frac{4}{3}\pi 39^3)$ *to solve:* $\pi 3^2(5) + \frac{1}{3}(\pi 3^2(\sqrt{5^2 - 3^2}))$

Volume = $191,000 \text{ ft}^3$

Volume = 179.1 yd^3

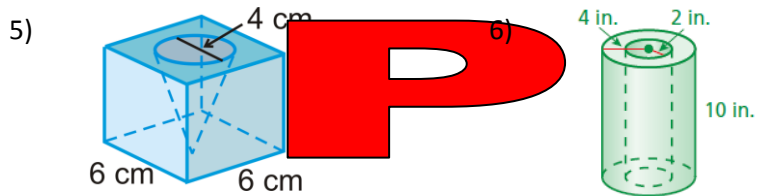


to solve: $\pi 3.5^2 + 2\pi 3.5(5.5) + \frac{1}{2}(4\pi 3.5^2)$

Surface Area = 236.4 units^2

to solve: $\pi 3.5^2(5.5) - \frac{1}{2}(\frac{4}{3}\pi 3.5^3)$

Volume = 121.9 units^3



to solve: $\pi(2)(\sqrt{2^2 + (6)^2} + (6)(6)(6) - \pi 2^2)$

Surface Area = 243.2 cm^2

to solve: $(6)(6)(6) - \frac{1}{3}(\pi 2^2(6))$

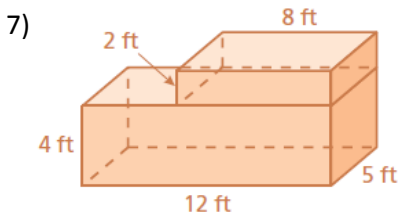
Volume = 190.9 cm^3

to solve: $\pi 4^2(2) + 2\pi 4(10) + 2\pi 2(10) - \pi 2^2(2)$

Surface Area = 452.4 in^2

to solve: $\pi 4^2(10) - \pi 2^2(10)$

Volume = 377.0 in^3

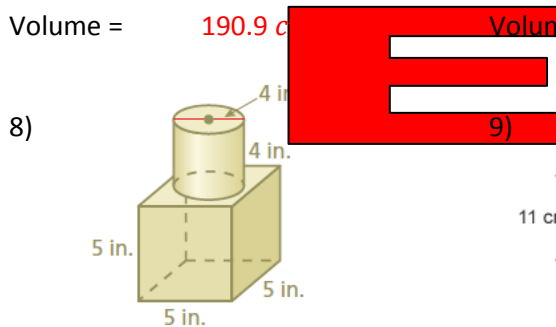


to solve: $12(5) + 12(4)(2) + 4(5)(2) + 4(5) + 8(2)(2) + 2(5)(2) + 8(5)$

Surface Area = 308.0 ft^2

to solve: $4(5)(12) + 2(5)(8)$

Volume = 320.0 ft^3



to solve: $5(5)(6) + (\pi)(2^2) + 2(\pi)(2)(4) - (\pi)(2^2)$

Surface Area = 200.3 in^2

to solve: $(5)(5)(5) + \pi 2^2(4)$

Volume = 175.3 in^3

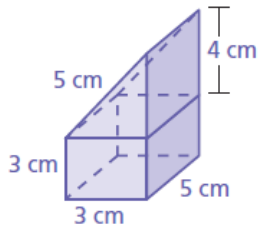
to solve: $20(6) + (6)(11) + 6(4) + 7(4) + (20(4) + 5(7))(2) + 5(6) + 15(6)$

Surface Area = 602.0 cm^2

to solve: $20(4)(6) + 7(6)(5)$

Volume = 690.0 cm^3

10)



to solve:

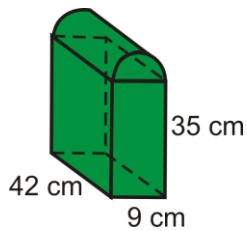
$$3(5) + 3(3)(2) + 3(5)(2) + 4(5) + \frac{1}{2}(3)(4)(2) + 5(5)$$

Surface Area = 120.0 cm^2

to solve: $3(3)(5) + 3(4)(5) \left(\frac{1}{2}\right)$

Volume = 75.0 cm^3

13)



to solve:

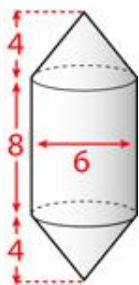
$$9(42) + 2(9)(35) + 2(35)(42) + \frac{1}{2}(2)(\pi)(4.5)(42) + \frac{1}{2}(2)(\pi)(4.5)^2$$

Surface Area = $4,605.4 \text{ cm}^2$

to solve: $9(35)(42) + \pi(4.5^2)(42) \left(\frac{1}{2}\right)$

Volume = $14,566.0 \text{ cm}^3$

16)



to solve:

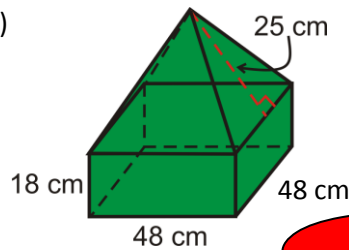
$$2\pi(3)(8) + 2(\pi)(3)(\sqrt{3^2 + 4^2})$$

Surface Area = 245.0 units^2

to solve: $\pi(3^2)(8) + \frac{1}{3}(2)(\pi)(3^2)(4)$

Volume = 301.6 units^3

11)



to solve:

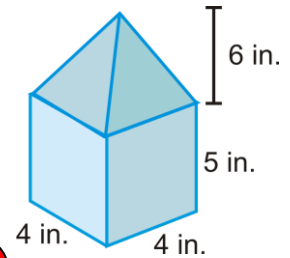
$$48(48) + 4(48)(18) + 4(48)(25) \left(\frac{1}{2}\right) + 4(4) + 4(4)(5) + 4 \left(\frac{1}{2}\right) (4)(\sqrt{6^2 + 2^2})$$

Surface Area = $8,160.0 \text{ cm}^2$

to solve: $(48)(48)(18) + \frac{1}{3}(48)(4) \left(\frac{1}{2}(24^2)\right) + 4(4)(5) + \frac{1}{3}(4)(4)(6)$

Volume = $46,848.0 \text{ cm}^3$

12)

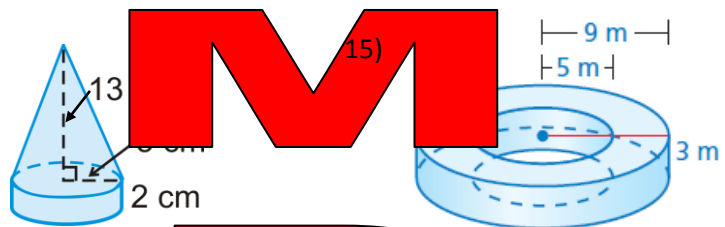


to solve:

Surface Area = 146.6 in^2

Volume = 112.0 in^3

14)



to solve:

$$\pi(5^2) + 2(\pi)(5)(2) + \pi(5)(\sqrt{5^2 + 13^2})$$

Surface Area = 360.2 cm^2

to solve: $\pi(5^2)(2) + \frac{1}{3}(\pi)(5^2)$

Volume = 497.4 cm^3

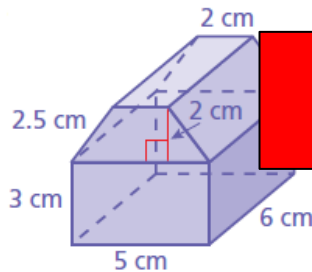
to solve:

Surface Area = 615.8 m^2

to solve: $\pi(9^2)(3) - \pi(5^2)(3)$

Volume = 527.8 m^3

17)



to solve:

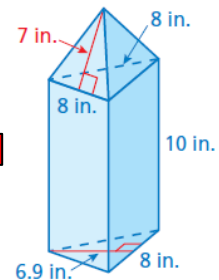
$$5(6) + 2(3)(5) + 2(3)(6) + 2(2.5)(6) + 2(6) + 2(2) \left(\frac{5+2}{2}\right)$$

Surface Area = 152.0 cm^2

to solve: $\left(3(5) + 2 \left(\frac{5+2}{2}\right)\right)(6)$

Volume = 132.0 cm^3

18)



to solve:

$$\frac{1}{2}(6.9)(8) + 3(8)(10) + \frac{1}{2}(3)(8)(7)$$

Surface Area = 351.6 in^2

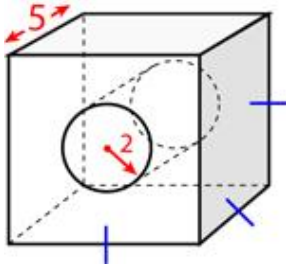
to solve: $\frac{1}{2}(6.9)(8) + 3(8)(10) + \frac{1}{2}(3)(8)(7)$

Surface Area = 351.6 in^2

Name: _____

Find the surface area and volume of each shape to the nearest tenth.

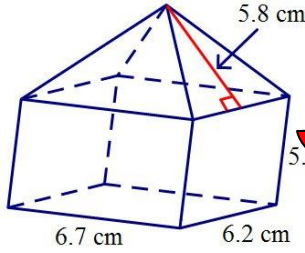
1)



Surface Area = _____

Volume = _____

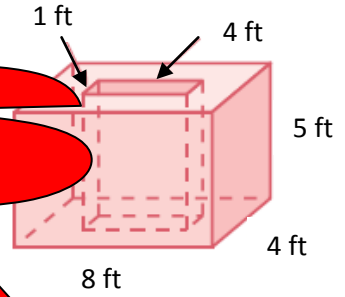
2)



Surface Area = _____

Volume = _____

3)



Surface Area = _____

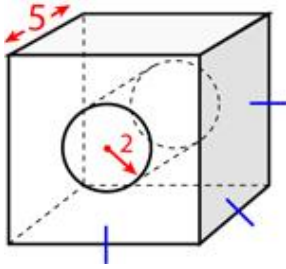
Volume = _____

S
A
M
P
L
E

Name: **KEY**

Find the surface area and volume of each shape to the nearest tenth.

1)



to solve:

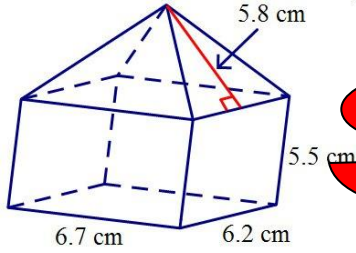
$$5(5)(6) + 2(\pi)(2)(5) - 2(\pi)(2^2)$$

Surface Area = **187.7 units²**

to solve: $5(5)(5) - \pi(2^2)(5)$

Volume = **62.2 units³**

2)



to solve:

$$6.2(6.7) + 2(6.2)(5.5) + 2(6.7)(5.5) + 2\left(\frac{1}{2}\right)(6.2)(5.8) + 2\left(\frac{1}{2}\right)(6.7)\left(\sqrt{\left(\sqrt{(5.8)^2 - \left(\frac{1}{2}(6.7)\right)^2}\right)^2 + \left(\frac{1}{3}(6.2)\right)^2}\right)$$

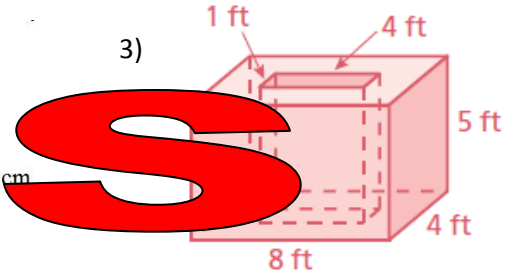
Surface Area = **257.3 cm²**

to solve:

$$6.2(6.7)(5.5) + \frac{1}{3}(6.2)(6.7)\left(\sqrt{(5.8)^2 - \left(\frac{1}{2}(6.7)\right)^2}\right)$$

Volume = **294.0 cm³**

3)



to solve:

$$2(4)(8) + 2(4)(5) + 2(5)(8) + 2(1)(5) + 2(4)(5) - 2(1)(4)$$

Surface Area = **226.0 ft²**

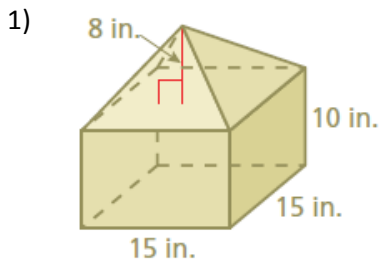
to solve: $4(3)(8) - 1(4)(5)$

Volume = **140.0 ft³**

**S
A
M
P
L
E**

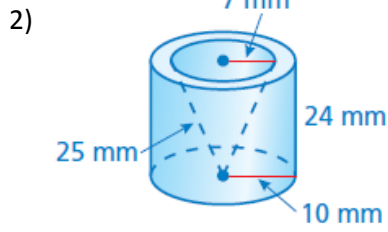
Name: _____

Find the surface area and volume of each shape to the nearest tenth.



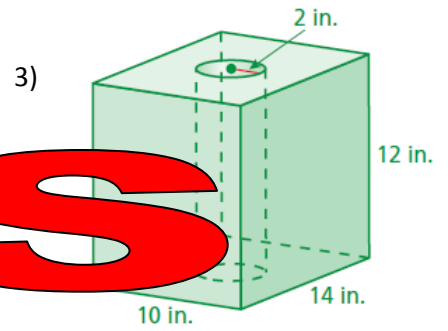
Surface Area = _____

Volume = _____



Surface Area = _____

Volume = _____



Surface Area = _____

Volume = _____

A

M

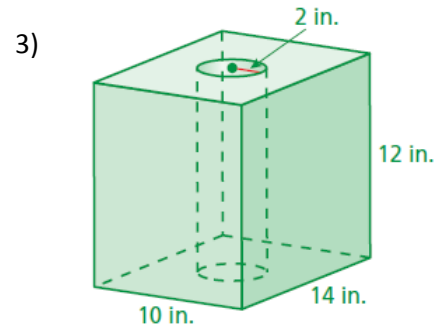
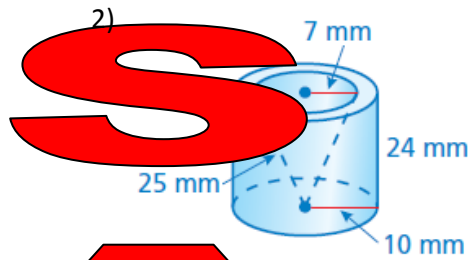
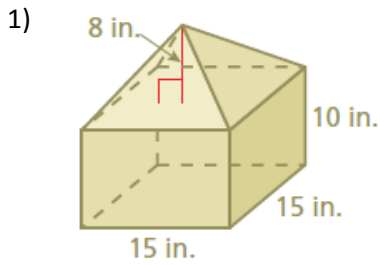
P

L

E

Name: **KEY**

Find the surface area and volume of each shape to the nearest tenth.



to solve:

$$15(15) + 4(10)(15) + \frac{1}{2}(4)(15) \left(\sqrt{\left(\frac{1}{2}(15)\right)^2 + 8^2} \right)$$

to solve:

$$2(\pi)10^2 + 2(\pi)(10)(24) + \pi(7)(25) - \pi(7)^2$$

to solve:

$$2(10)(14) + 2(10)(12) + 2(12)(14) + 2(\pi)(2)(12) - 2(\pi)(2)^2$$

Surface Area = 1154.0 in^2

Surface Area = 2532.1 mm^2

Surface Area = 981.7 in^2

to solve: $15(15)(10) + \frac{1}{3}(15)(15)(8)$

to solve: $\pi(10)^2(24) - \frac{1}{3}(\pi)(7)^2(24)$

to solve: $10(12)(14) - \pi(2)^2(12)$

Volume = 2850.0 in^3

Volume = 6308.3 mm^3

Volume = 1529.2 in^3

P

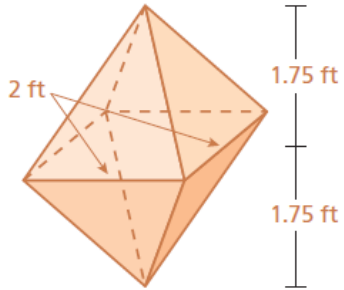
L

E

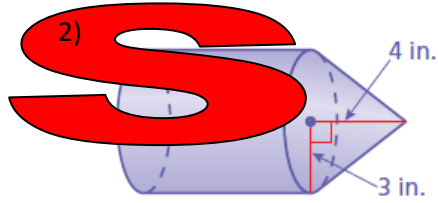
Name: _____

Find the surface area and volume of each shape to the nearest tenth.

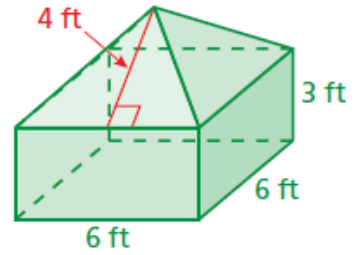
1)



2)



3)



Surface Area = _____

Surface Area = _____

Surface Area = _____

Volume = _____

Volume = _____

Volume = _____

M

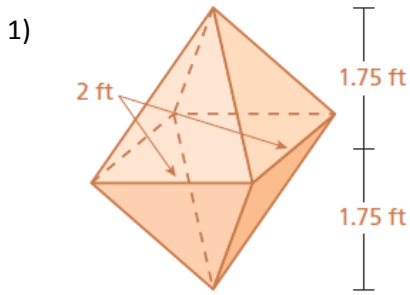
P

L

E

Name: **KEY**

Find the surface area and volume of each shape to the nearest tenth.



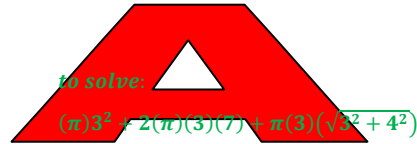
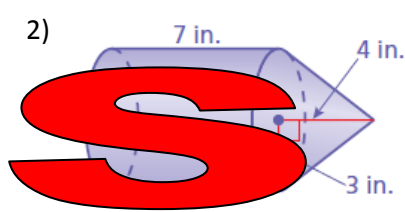
to solve:

$$8 \left(\frac{1}{2} (2) (\sqrt{1^2 + 1.75^2}) \right)$$

Surface Area = 16.1 ft^2

to solve: $2 \left(\frac{1}{3} (2) (2) (1.75) \right)$

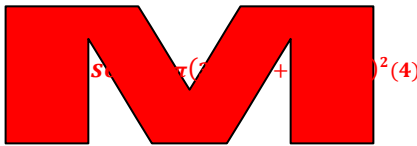
Volume = 4.7 ft^3



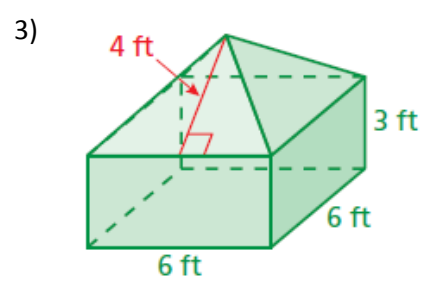
to solve:

$$(\pi)3^2 + 2(\pi)(3)(7) + \pi(3)(\sqrt{4^2 + 4^2})$$

Surface Area = 207.3 in^2



Volume = 235.6 in^3



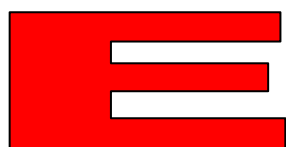
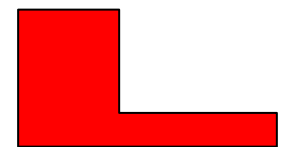
to solve:

$$6(6) + 4(6)(3) + \frac{1}{2}(4)(6)(4)$$

Surface Area = 156.0 ft^2

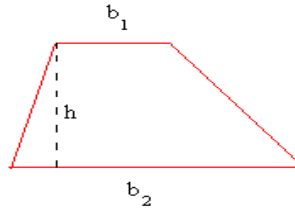
to solve: $6(6)(3) + \frac{1}{3}(6)(6)(\sqrt{4^2 - 3^2})$

Volume = 139.7 ft^3



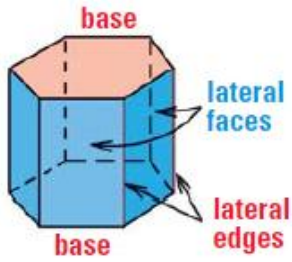
Notes Surface Area of Prisms and Cylinders

Area of Trapezoid

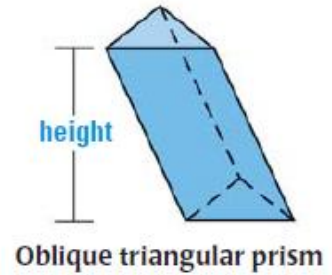


$$S = \frac{(b_1 + b_2) \times h}{2}$$

Surface area of a prisms:



$$S = 2B + Ph$$



Formula's: $S = 2B + Ph$ or $S = aP + Ph$

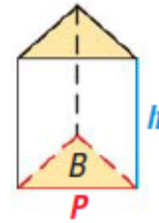
a = length of apothem of base

S = surface area

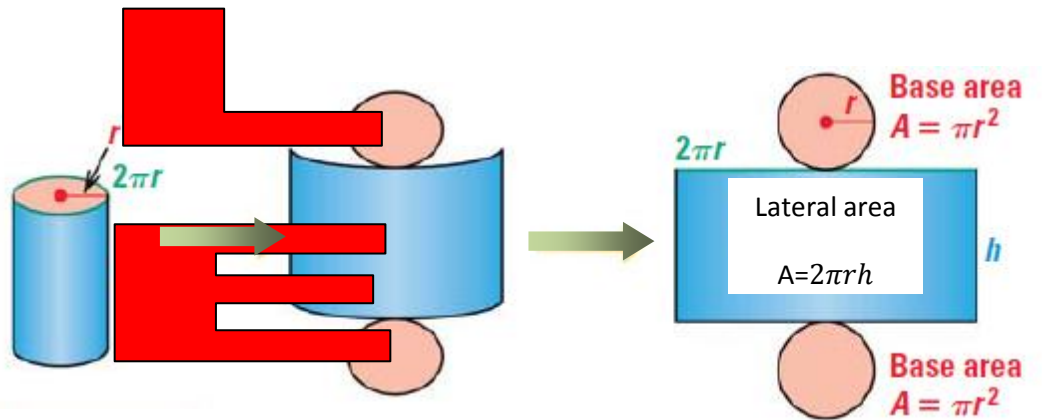
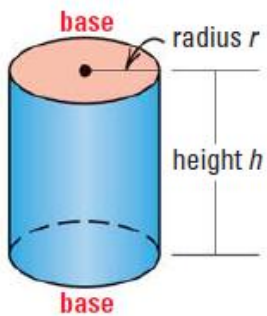
P = perimeter of base

h = height of prism

B = base area



Surface area a cylinder:



Formula's: $S = 2B + Ch$ or $S = 2\pi r^2 + 2\pi r h$

C = circumference of base

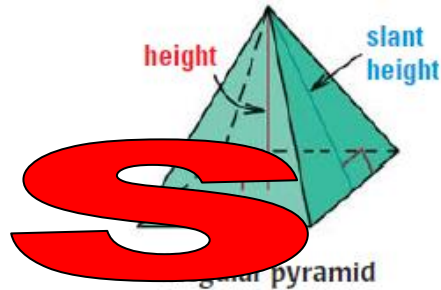
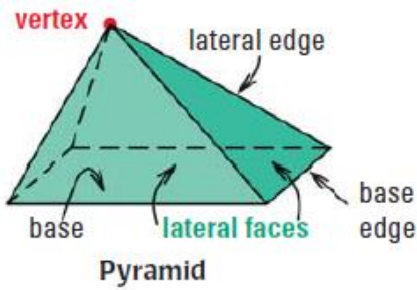
S = surface area B = base area

r = radius of base

h = height of prism

Surface area of Pyramids and Cones

Surface area of a regular pyramid:



Formula's: $S = B + \frac{1}{2}P\ell$

S = surface area

B = base area

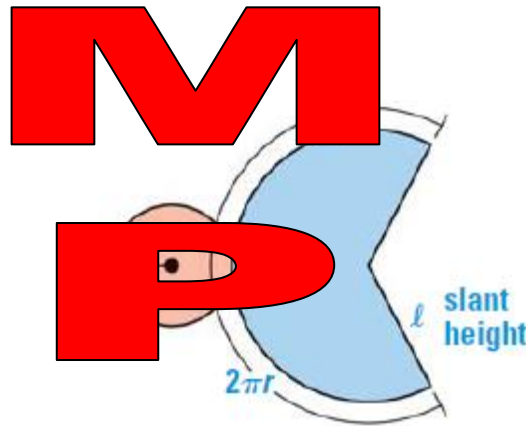
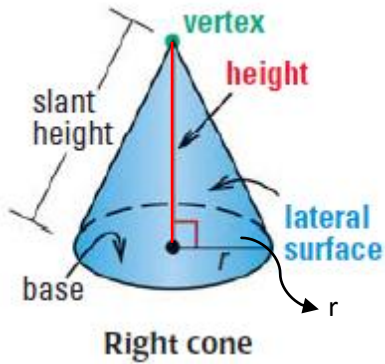
P = perimeter of base

ℓ = slant height

S

A

Surface area of a right cone:



Formula's: $S = B + \frac{1}{2}C\ell$ or

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

S = surface area

B = base area

r = radius of base

C = circumference

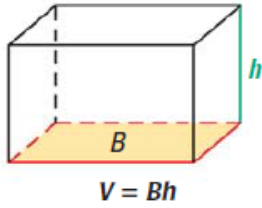
ℓ = slant height

L

E

Volume of Prisms and Cylinders

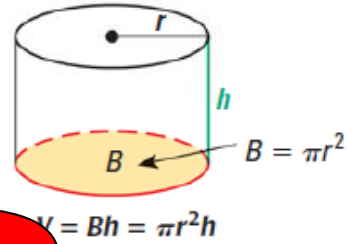
Volume of a prism:



Formula's: $V = Bh$

V = volume
B = base area
h = height

Volume of a cylinder:



Formula's: $V = Bh$ or $V = \pi r^2 h$

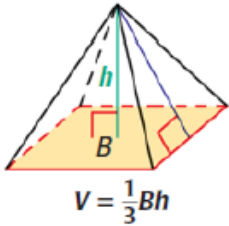
V = volume
B = base area
h = height
r = radius of base

S

A

Volume of Pyramids and Cones

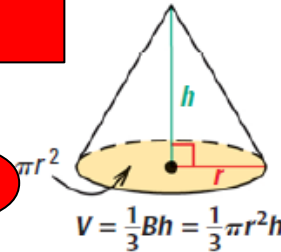
Volume of a pyramid:



Formula's: $V = \frac{1}{3} Bh$

V = volume
B = base area
h = height

Volume of a cone:



Formula's: $V = \frac{1}{3} Bh$ or $V = \frac{1}{3} \pi r^2 h$

V = volume
B = base area
h = height
r = radius of base

M

P

L

Surface Area and Volume of Spheres

Surface area of a sphere:



Formula's: $S = 4\pi r^2$

S = surface area
r = radius of sphere

Volume of a sphere:



Formula's: $V = \frac{4}{3} \pi r^3$

V = volume
r = radius of sphere

E