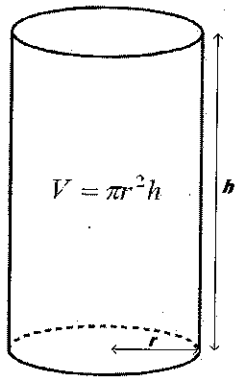
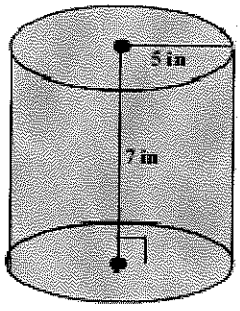
Volume of Cylinders



Formula: 3.14 x radius x radius x height

Directions: Find the volume of each cylinder using the formula for each. Be sure to write out the formula, Substitute the numbers into the formula, and then solve. Write your answers in the box and then check them with the QR code. Show all work.

1.



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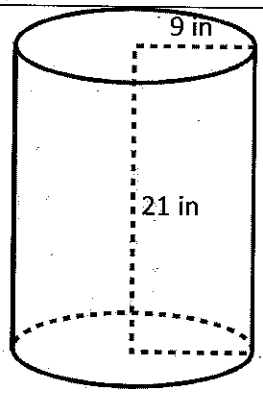

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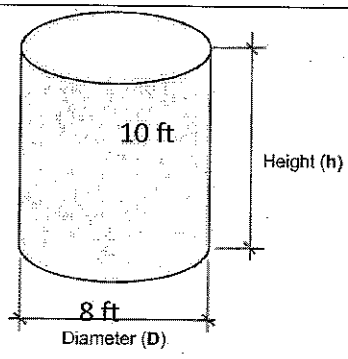
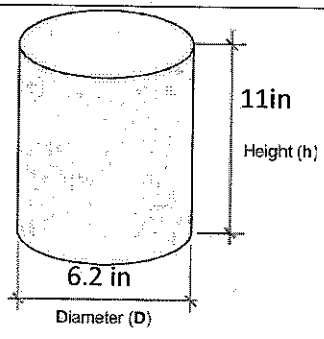
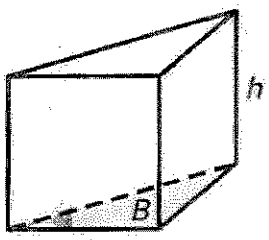


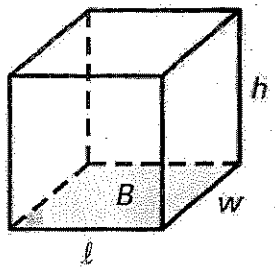
4.



Volume of prisms

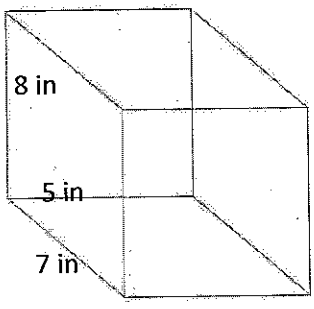
V = Bh





Directions: Find the volume of each prism using the formula for each. Be sure to write out the formula, substitute the numbers into the formula, and then solve. Write your answers in the box and then check them with the QR code. Show all work.

1.



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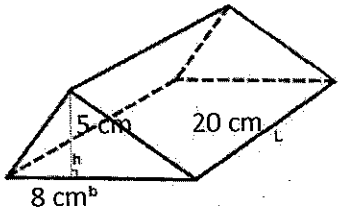
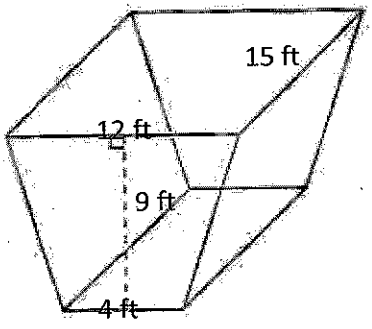
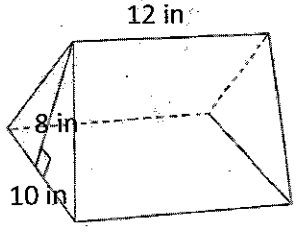


3.

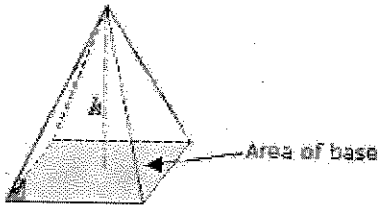


4. TRIANGULAR PRISM



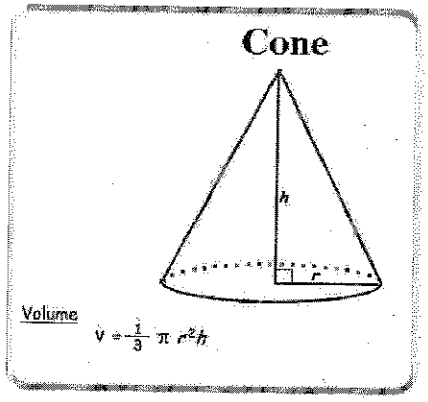
Volume of Cones and Pyramids

Pyramid



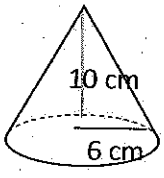
$$V = \frac{1}{3} B\ h$$

B — area of base; h — height

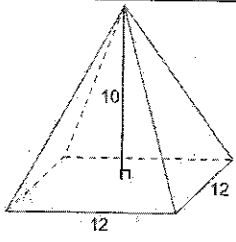


Directions: Find the volume of each cone or pyramid using the formula for each. Be sure to write out the formula, substitute the numbers into the formula, and then solve. Write your answers in the box and then check them with the QR code. Show all work.

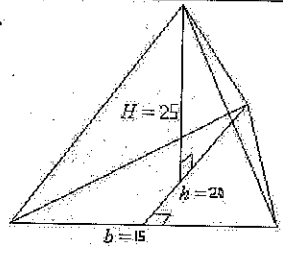
1.



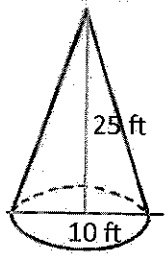
2.



3.



4.

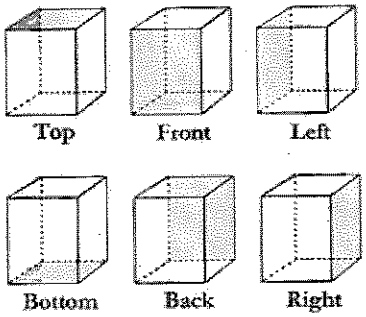


Surface Area of Prisms and Cylinders

Surface Area of Prisms:

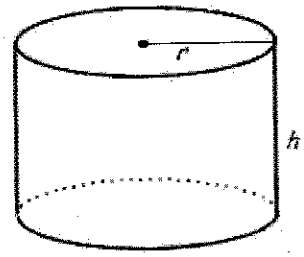
Sum of all Faces

Surface Area of a Prism

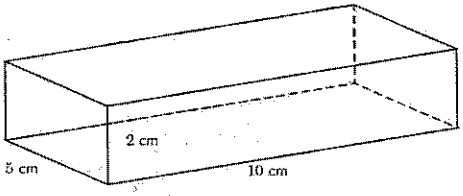


Cylinder:

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

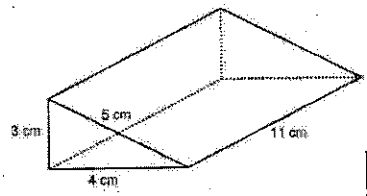


1.



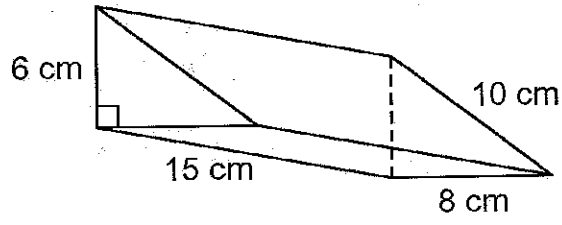
SA = 2lw + 2hw + 2lh

2.



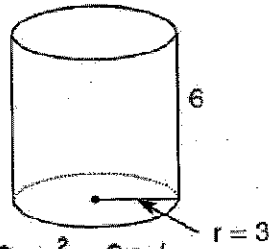
SA = Sum of all bases

3.



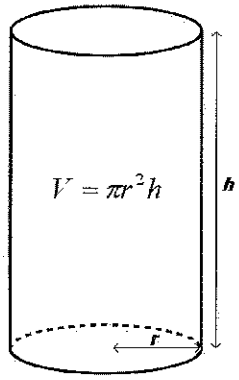
SA = Sum of all bases

4.



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

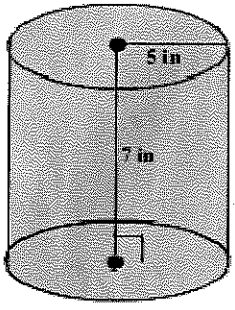
Volume of Cylinders



Formula: 3.14 x radius x radius x height

Directions: Find the volume of each cylinder using the formula for each. Be sure to write out the formula, Substitute the numbers into the formula, and then solve. Write your answers in the box and then check them with the QR code. Show all work.

1.



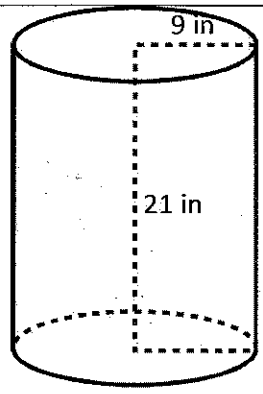
$V = \pi r^2 h$

$V = 3.14 \cdot 5^2 \cdot 7$

$V = 3.14 \cdot 25 \cdot 7$

$V = 549.5 \text{ in}^3$

2.



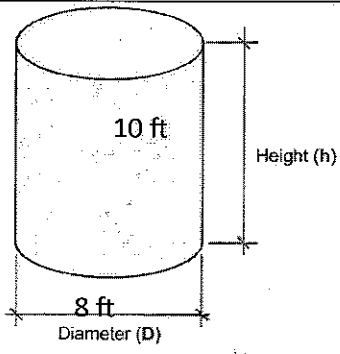
$V = \pi r^2 h$

$V = 3.14 \cdot 9^2 \cdot 21$

$V = 3.14 \cdot 81 \cdot 21$

$V = 5,341.14 \text{ in}^3$

3.



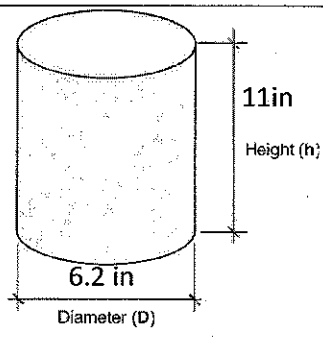
$V = \pi r^2 h$

$V = 3.14 \cdot 4^2 \cdot 10$

$V = 3.14 \cdot 16 \cdot 10$

$V = 502.4 \text{ ft}^3$

4.



$V = \pi r^2 h$

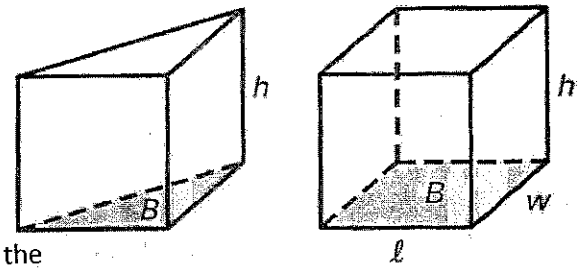
$V = 3.14 \cdot 3.1^2 \cdot 11$

$V = 3.14 \cdot 9.61 \cdot 11$

$V = 331.92 \text{ ft}^3$

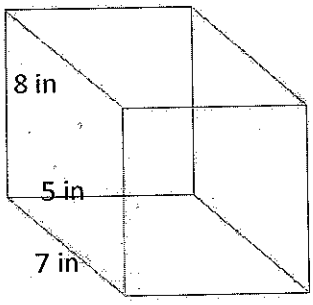
Volume of prisms

V = Bh



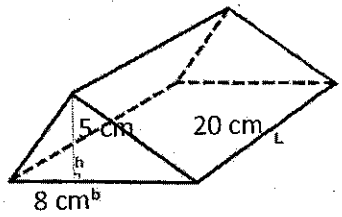
Directions: Find the volume of each prism using the formula for each. Be sure to write out the formula, substitute the numbers into the formula, and then solve. Write your answers in the box and then check them with the QR code. Show all work.

1.



$V = Bh$
$V = \ell \cdot w \cdot h$
$V = 7 \cdot 5 \cdot 8$
$V = 280 \text{ in}^3$

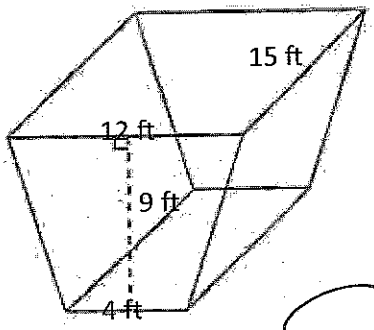
2.



$V = Bh$
$B = \frac{1}{2}bh$
$B = \frac{1}{2} \cdot 8 \cdot 5$
$B = 20$

$V = 20 \cdot 20$
$V = 400 \text{cm}^3$

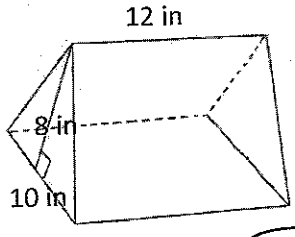
3.



$V = Bh$
$B = \frac{1}{2}h(b_1 + b_2)$
$B = \frac{1}{2} \cdot 9(4 + 12)$
$B = \frac{1}{2} \cdot 9 \cdot 16$
$B = 72$

$V = Bh$
$V = 72 \cdot 15$
$V = 1{,}080 \text{ ft}^3$

4. TRIANGULAR PRISM

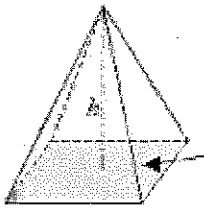


$V = Bh$
$B = \frac{1}{2}bh$
$B = \frac{1}{2} \cdot 10 \cdot 8$
$V = 40$

$V = Bh$
$V = 40 \cdot 12$
$V = 480 \text{in}^3$

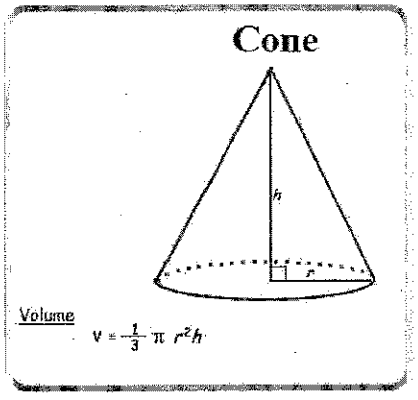
Volume of Cones and Pyramids

Pyramid



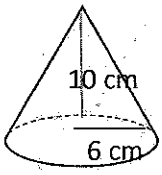
$$V = \frac{1}{3} B h$$ — height

area of base



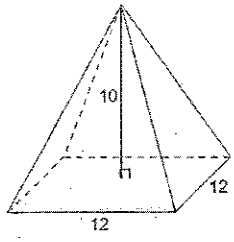
Directions: Find the volume of each cone or pyramid using the formula for each. Be sure to write out the formula, substitute the numbers into the formula, and then solve. Write your answers in the box and then check them with the QR code. Show all work.

1.



$V = \frac{1}{3} \pi r^2 h$
$V = \frac{1}{3} \cdot 3.14 \cdot 6^2 \cdot 10$
$V = \frac{1}{3} \cdot 3.14 \cdot 36 \cdot 10$
$V = 1,130.4 \div 3$
$V = 376.8 \text{ cm}^3$

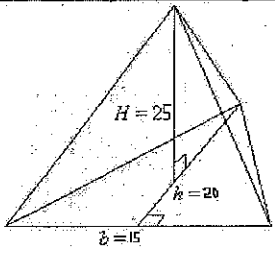
2.



$V = \frac{1}{3} Bh$
$B = l \cdot w$
$B = 12 \cdot 12$
$B = 144$

$V = \frac{1}{3} Bh$
$V = \frac{1}{3} \cdot 144 \cdot 10$
$V = 1440 \div 3$
$V = 480 \text{ units}^3$

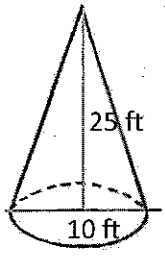
3.



$V = \frac{1}{3} Bh$
$B = \frac{1}{2} bh$
$B = \frac{1}{2} \cdot 15 \cdot 20$
$B = 150$

$V = \frac{1}{3} Bh$
$V = \frac{1}{3} \cdot 150 \cdot 25$
$V = 3,750 \div 3$
$V = 1,250 \text{ units}^3$

4.



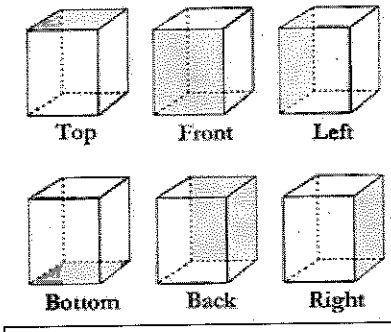
$V = \frac{1}{3} \pi r^2 h$
$V = \frac{1}{3} \cdot 3.14 \cdot 5^2 \cdot 25$
$V = \frac{1}{3} \cdot 3.14 \cdot 25 \cdot 25$
$V = 1962.5 \div 3$
$V = 654.16 \text{ ft}^3$

Surface Area of Prisms and Cylinders

Surface Area of Prisms:

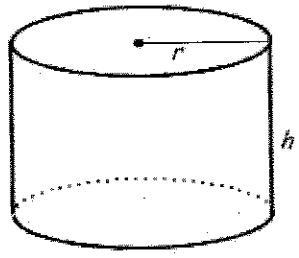
Sum of all Faces

Surface Area of a Prism

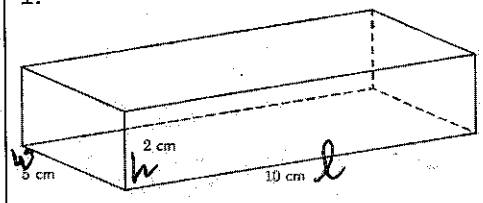


Cylinder:

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



1.



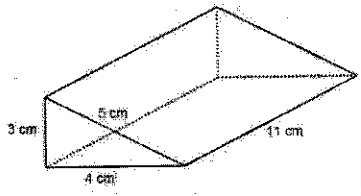
SA = 2lw + 2hw + 2lh

$SA = 2 \cdot 10 \cdot 5 + 2 \cdot 2 \cdot 5 + 2 \cdot 10 \cdot 2$

$SA = 100 + 20 + 40$

$SA = 160 cm^2$

2.



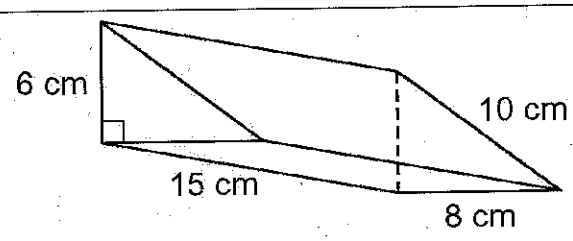
SA = Sum of all bases

$\triangle \cdot 2$			
$\frac{1}{2}bh$	lw	lw	lw
$\frac{1}{2} \cdot 4 \cdot 3$	$11 \cdot 3$	$11 \cdot 4$	$11 \cdot 5$
$6 \cdot 2$	33	44	55
12			

$12 + 33 + 44 + 55$

$SA = 144 cm^2$

3.

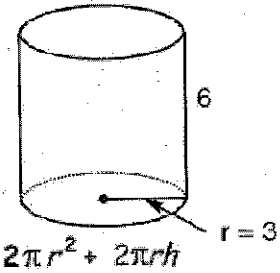


SA = Sum of all bases

$\triangle \cdot 2$			
$\frac{1}{2}bh$	lw	lw	lw
$\frac{1}{2} \cdot 8 \cdot 6$	$15 \cdot 8$	$15 \cdot 6$	$15 \cdot 10$
$24 \cdot 2$	120	90	150
48			

$48 + 120 + 90 + 150 = 408 cm^2$

4.



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

$2 \cdot 3.14 \cdot 3^2 + 2 \cdot 3.14 \cdot 3 \cdot 6$

$56.52 + 113.04$

$169.56 unit^2$