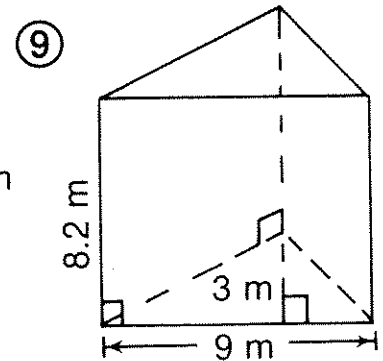
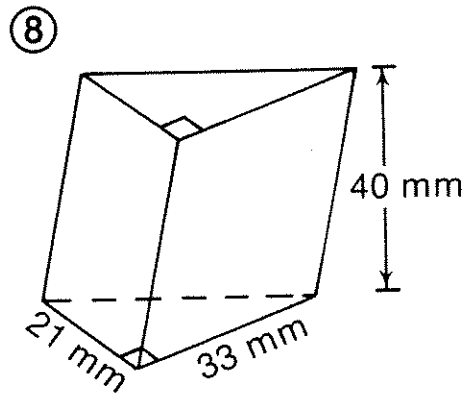
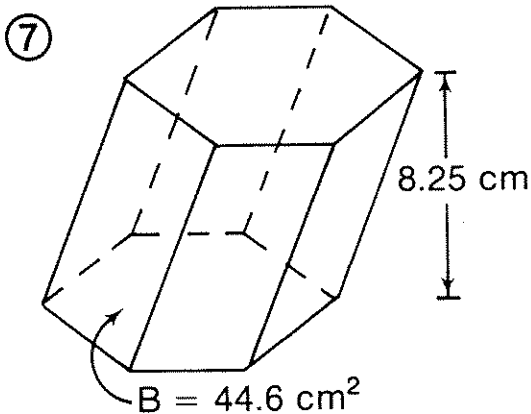
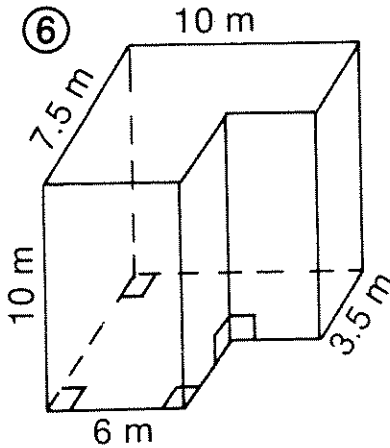
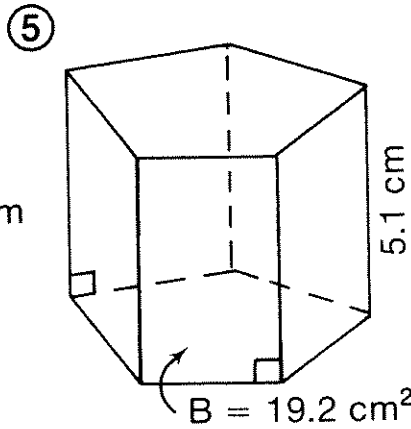
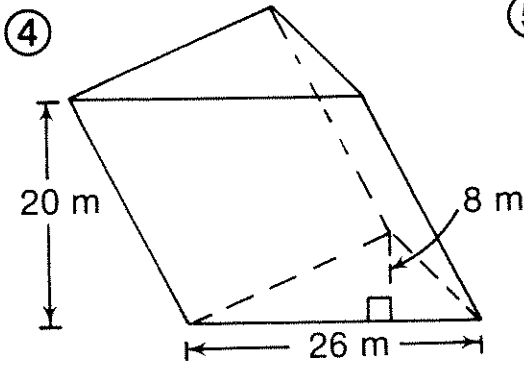
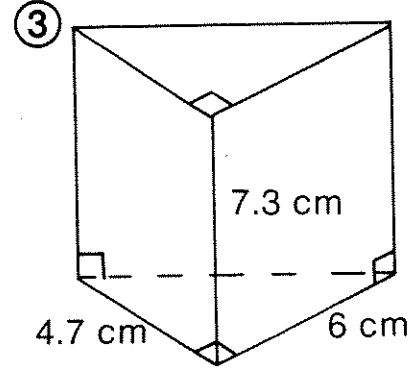
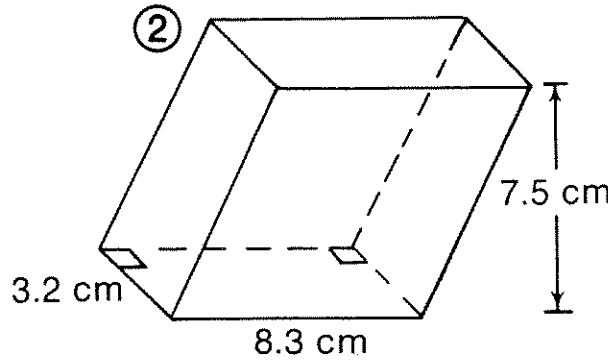
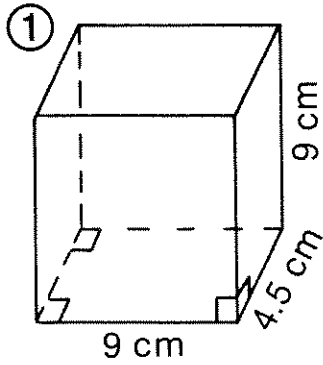




What Do You Call It When A Bull Eats A Bomb?



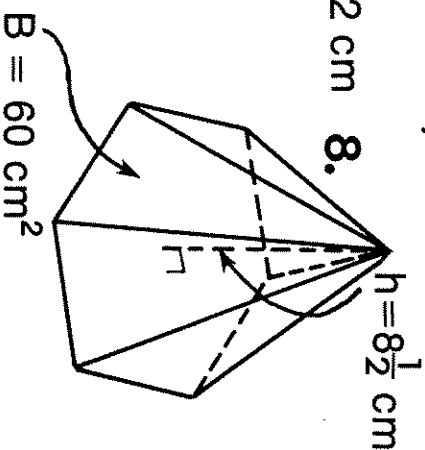
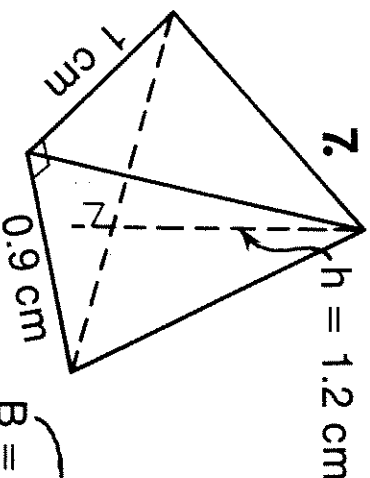
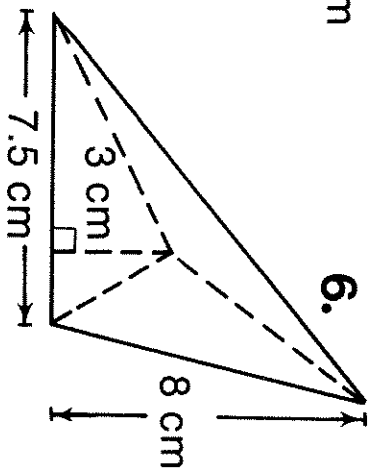
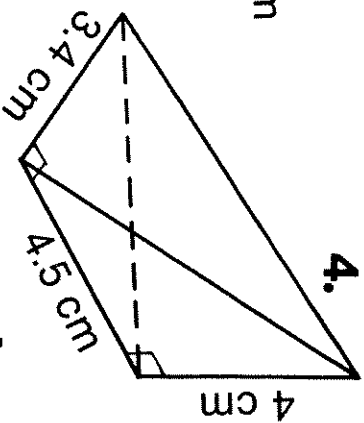
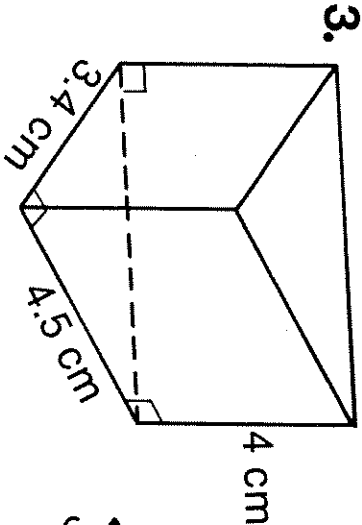
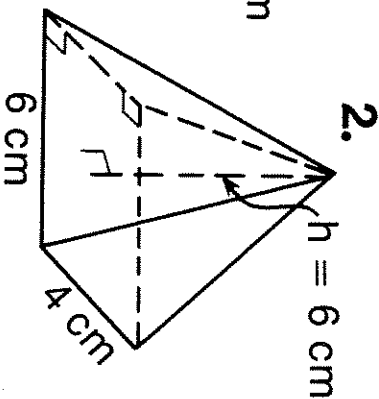
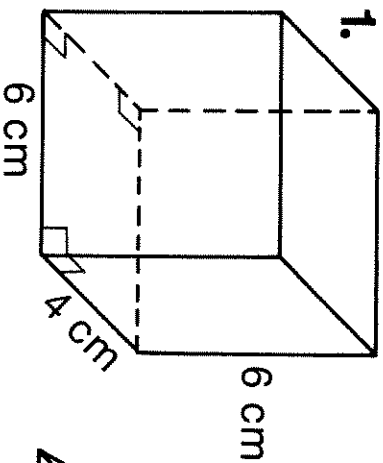
Figure out the VOLUME of each prism and find your answers in the rectangle below. Cross out each box containing a correct answer. When you finish, there will be 5 boxes not crossed out. Print the letters from these boxes in the boxes at the bottom of the page.



CO	WS	GR	AB	IG	BO	OM
102.93 cm ³	2080 m ³	110.7 m ³	117.7 m ³	97.92 cm ³	199.2 cm ³	9150 mm ³
BL	IN	OW	AB	HO	LE	UP
590 m ³	369.5 cm ³	364.5 cm ³	1050 m ³	13,860 mm ³	91.82 cm ³	367.95 cm ³

What Should You Call A Man With A Clamp?

TO ANSWER THIS QUESTION: Find the VOLUME of each prism or pyramid and circle your answers in the answer list. When you finish, arrange the letters in order from the letter of the smallest correct answer to the letter of the largest correct answer. Write the letters in this order in the boxes at the bottom of the page.



(B) 810 cm ³	(N) 3.38 cm ³	(E) 48 cm ³	(V) 10.2 cm ³	(M) 0.15 cm ³
(S) 30.6 cm ³	(A) 0.18 cm ³	(T) 700 cm ³	(E) 124 cm ³	(U) 170 cm ³
(G) 144 cm ³	(Y) 720 cm ³	(H) 160 cm ³	(I) 30 cm ³	(T) 38 cm ³

LETTER OF SMALLEST
CORRECT ANSWER



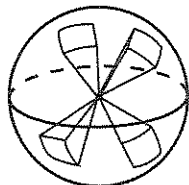
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LETTER OF LARGEST
CORRECT ANSWER

VOLUME OF A SPHERE

If you were the manufacturer of bowling balls, it would be important for you to know the volume of a sphere. To find the volume of a sphere, picture the sphere filled with numerous pyramids. The height of each pyramid represents the radius (r) of the sphere. The sum of the areas of all the bases represents the surface area of the sphere.



$$\text{Volume of each pyramid} = \frac{1}{3}Bh$$

$$\text{Sum of the volumes} = n \cdot \frac{1}{3}Br$$

$$= \frac{1}{3}(nB)r$$

$$= \frac{1}{3}(4\pi r^2)r$$

$$= \frac{4}{3}\pi r^3$$

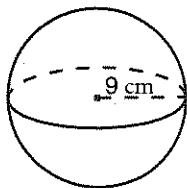
Substitute r for h of n pyramids

Substitute nB with the S.A. of a sphere

Theorem: The volume (V) of a sphere is determined by the product of $\frac{4}{3}\pi$ times the radius cubed.

$$V = \frac{4}{3}\pi r^3$$

Example: Find the volume of the sphere. Use 3.14 for π .

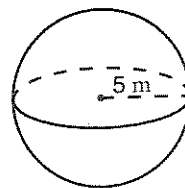


$$V = \frac{4}{3}\pi r^3$$

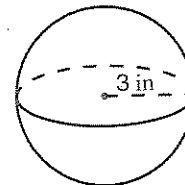
$$V \approx \frac{4}{3}(3.14)(9)^3$$

$$V \approx 3052.08 \text{ cm}^3$$

_____ 25.



_____ 26.



_____ 27. Sphere: $r = 12 \text{ m}$

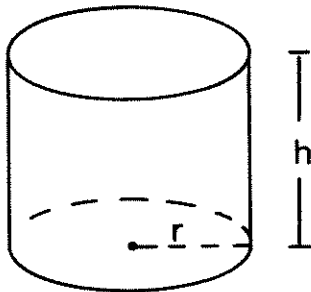
_____ 28. Sphere: $r = 6 \text{ ft}$



Solid Fun

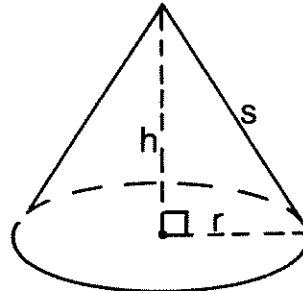


Given under each figure are the formulas for its volume (V) and surface area (S). Use the appropriate formula to do any exercise below (use $\pi \doteq 3.14$). Circle the letter of the correct answer. Write this letter in each box at the bottom of the page that contains the number of that exercise.



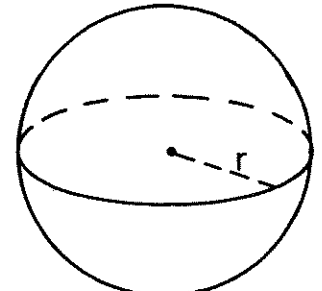
$$V = Bh$$

$$S = 2\pi r(r+h)$$



$$V = \frac{1}{3} Bh$$

$$S = \pi r(r+s)$$



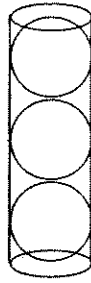
$$V = \frac{4}{3} \pi r^3$$

$$S = 4\pi r^2$$

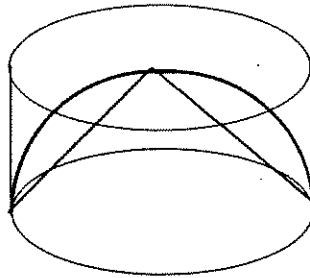
- ① Find the volume of a cylinder if $r = 4$ cm, $h = 10$ cm.
(R) 502.4 cm³ (S) 516.4 cm³
- ② Find the surface area of a cylinder if $r = 4$ cm, $h = 10$ cm.
(I) 351.68 cm² (A) 349.58 cm²
- ③ Find the volume of a cone if $r = 6$ cm, $h = 8$ cm.
(T) 310.54 cm³ (E) 301.44 cm³
- ④ Find the surface area of a cone if $r = 6$ cm, $h = 8$ cm, $s = 10$ cm.
(S) 301.44 cm² (D) 290.44 cm²
- ⑤ Find the volume of a sphere if $r = 6$ mm.
(H) 904.32 mm³ (L) 912.42 mm³
- ⑥ Find the surface area of a sphere if $r = 6$ mm.
(P) 412.26 mm² (F) 452.16 mm²
- ⑦ Find the volume of a cylinder if $r = 1.5$ m, $h = 4$ m.
(T) 29.16 m³ (N) 28.26 m³
- ⑧ Find the surface area of a cylinder if $r = 1.5$ m, $h = 4$ m.
(G) 50.21 m² (B) 51.81 m²
- ⑨ Find the volume of a cone if $r = 0.5$ dm, $h = 1.2$ dm.
(P) 0.415 dm³ (M) 0.314 dm³
- ⑩ Find the surface area of a cone if $r = 0.5$ dm, $h = 1.2$ dm, $s = 1.3$ dm.
(K) 2.826 dm² (D) 2.906 dm²
- ⑪ Find the volume of a sphere that has a diameter of 40 km.
(W) 30,463 $\frac{1}{3}$ km³ (C) 33,493 $\frac{1}{3}$ km³
- ⑫ Find the surface area of a sphere that has a diameter of 40 km.
(O) 5024 km² (A) 5048 km²

11	5	2	11	10	3	7	4	11	12	9	3	6	1	12	9	8	1	12	10	3	7	5	12	9	3	4
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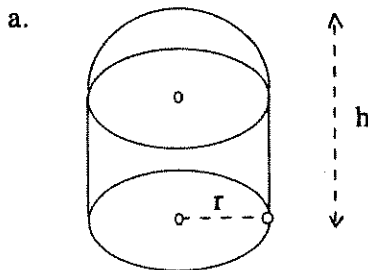
- ① A can of tennis balls often holds three tennis balls. What part of the can do the balls fill? (Hint: Let the radius of the can be r . Thus the height of the can is....)



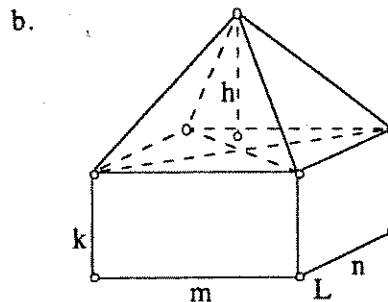
- ② Half a particular sphere (a hemisphere) fits exactly into a cylinder, as does a cone with its base at one base of the cylinder and its vertex on the other base. Find the ratios of their volumes. (Archimedes, an ancient Greek, knew these ratios.)



- ③ a. Give a formula for the volume of a sphere, in terms of the diameter d .
- b. Give a formula for the volume of a hemisphere, in terms of the radius r .
- ④ Give formulas for the following, using only the measurements indicated by variables.



hemisphere on top of right circular cylinder



The base is a rectangular region.