

Name: KEY

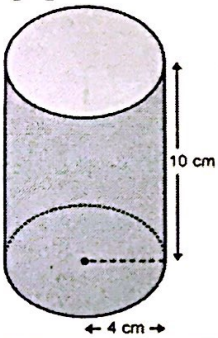
Scavenger Hunt Review – Area and Volume

- Listed below are 14 problems for the scavenger hunt. You may start at whichever problem you want, but each answer leads to the next problem. Your last answer should lead back to your first problem.
- You may ask people next to you for help if you get stuck, but try not to rely on them too much – you will have to do the quiz by yourself!
- There are no units listed on the answers because that could give something away, but you should still put units on your own answers.
- YOU MUST SHOW ALL WORK. If you need more room, attach a separate sheet of paper.
- Be aware – most of the answers listed are rounded answers but a few of them are exact answers.

ORDER OF LETTERS:

A M C I H D G K B J L E N F

A Find the volume:



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

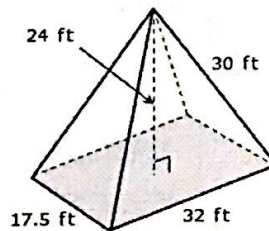
$$V = \pi \cdot 16 \cdot 10$$

$$V = 160\pi$$

$$V \approx 502.7 \text{ cm}^3$$

733.0

B Find the volume:



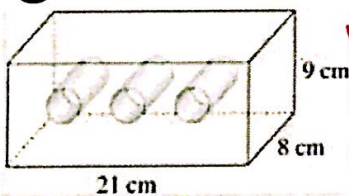
$$V = \frac{1}{3} \cdot l \cdot w \cdot h$$

$$V = \frac{1}{3} \cdot 17.5 \cdot 32 \cdot 24$$

$$V = 4480 \text{ ft}^3$$

62.8

C Find the volume. Each hole has a radius of 1.4 cm.



$$V = \text{Prism} - 3(\text{Cylinder})$$

$$V = 21 \cdot 8 \cdot 9 - 3(\pi \cdot 1.4^2 \cdot 8)$$

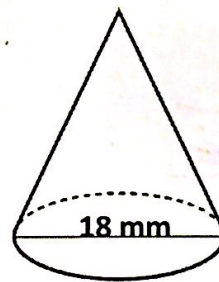
$$V \approx 1512 - 3(49.26)$$

$$V \approx 1512 - 147.78$$

$$V \approx 1364.2 \text{ cm}^3$$

27.5

D The volume is $567\pi \text{ mm}^3$. Find the height.



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

$$567\pi = \frac{1}{3} \pi \cdot 18^2 \cdot h$$

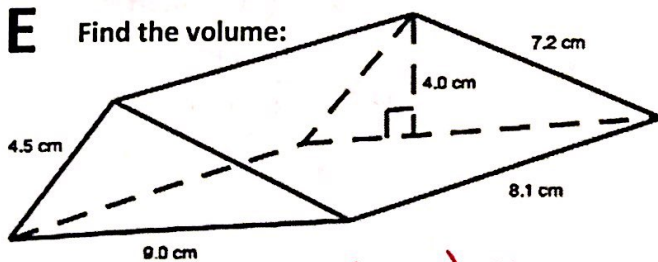
$$567 = \frac{1}{3} \cdot 81 \cdot h$$

$$567 = 27 \cdot h$$

$$21 \text{ mm} = h$$

2304π

E Find the volume:



$$V = \left(\frac{1}{2}bh\right) \cdot l$$

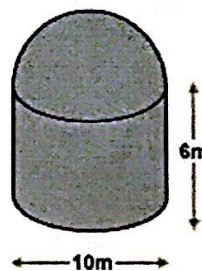
$$V = \left(\frac{1}{2} \cdot 9 \cdot 4\right) \cdot 8.1$$

$$V = 18 \cdot 8.1$$

$$V = 145.8 \text{ cm}^3$$

1017.9

F Find the volume:



$$V = \pi r^2 h + \frac{1}{2} \left(\frac{4}{3} \pi r^3\right)$$

$$V = \pi \cdot 5^2 \cdot 6 + \frac{1}{2} \left(\frac{4}{3} \pi \cdot 5^3\right)$$

$$V \approx 471.2 + \frac{1}{2} (523.6)$$

$$V \approx 471.2 + 261.8$$

$$V \approx 733.0 \text{ m}^3$$

21.7

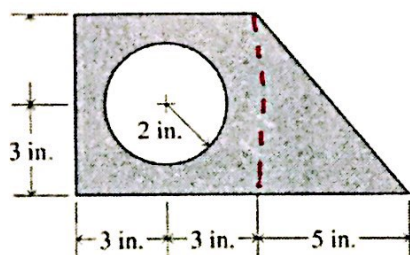
G Find the area:

$$A = \text{Square} + \text{Tri} - \text{Circle}$$

$$\text{Square} = 6 \cdot 6 = 36$$

$$\text{Triangle} = \frac{1}{2} \cdot 5 \cdot 6 = 15$$

$$\text{Circle} = \pi \cdot 2^2 \approx 12.6$$

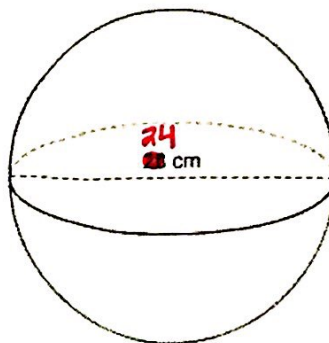


$$A \approx 36 + 15 - 12.6$$

$$A \approx 38.4 \text{ in}^2$$

21

H Find the volume:



$$V = \frac{4}{3} \pi \cdot 12^3$$

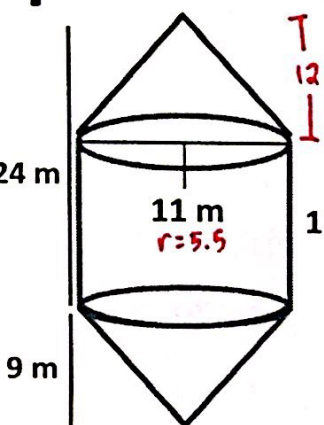
$$V = \frac{4}{3} \pi \cdot 1728$$

$$V = 2304 \pi \text{ cm}^3$$

$$V \approx 7238.2 \text{ cm}^3$$

1805.6

I Find the volume:



$$V = \text{Cone} + \text{Cylinder} + \text{Cone}$$

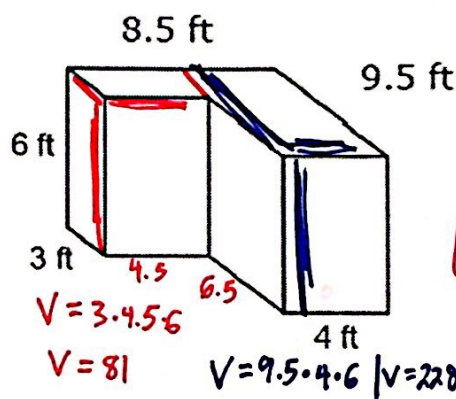
$$V = \frac{1}{3} \pi \cdot 5.5^2 \cdot 12 + \pi \cdot 5.5^2 \cdot 12 + \frac{1}{3} \pi \cdot 5.5^2 \cdot 9$$

$$V \approx 380.1 + 1140.4 + 285.1$$

$$V \approx 1805.6 \text{ m}^3$$

1364.2

J Find the volume:



$$\frac{228}{81} = 309$$

$$V = 309 \text{ ft}^3$$

4480

K A spherical snowball has a diameter of 6 centimeters. If it melts at a rate of 1.8 cubic centimeters per minute, how long would it take for the snowball to melt?

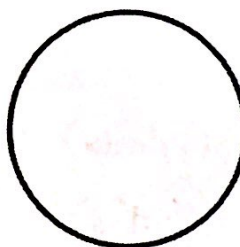
$$V = \frac{4}{3} \pi (3)^3$$

$$V \approx 113.1 \text{ cm}^3$$

$$113.1 \div 1.8 \approx 62.8 \text{ min}$$

38.4

L The circumference is 36π in. Find the area.



$$C = 2\pi r$$

$$36\pi = 2\pi r$$

$$36 = 2r$$

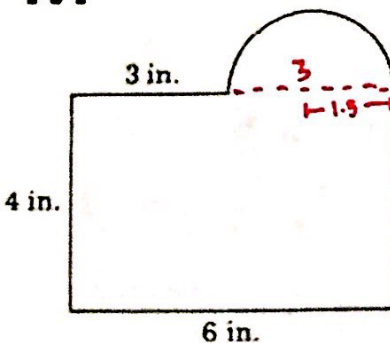
$$18 = r$$

$$A = \pi \cdot 18^2$$

$$A \approx 1017.9 \text{ in}^2$$

309

M Find the area:



$$A = \text{Rect.} + \frac{1}{2} (\text{Circle Area})$$

$$A = 6 \cdot 4 + \frac{1}{2} (\pi \cdot 1.5^2)$$

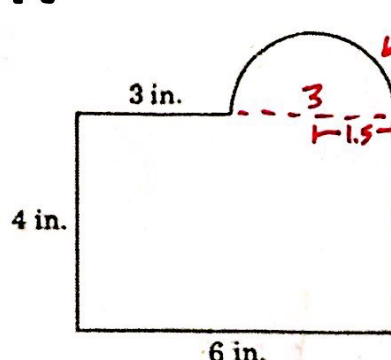
$$A \approx 24 + \frac{1}{2} (7.07)$$

$$A \approx 24 + 3.53$$

$$A \approx 27.5 \text{ in}^2$$

160π

N Find the total distance around the outside:



$$\frac{1}{2} (\text{Circumference})$$

$$\frac{1}{2} (2\pi \cdot 1.5)$$

$$\frac{1}{2} (9.4)$$

$$4.7$$

$$3 + 4 + 6 + 4 + 4.7 = 21.7 \text{ in}$$

145.8