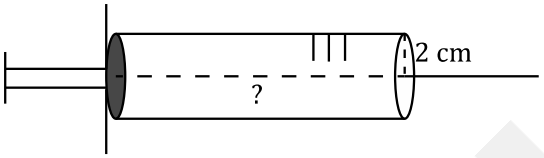
Volume Word Problems

1. Jack has identical cups in his cabinet that are in the shape of a cylinder with a diameter of 4 inches. He is planning on pouring 2 gallons of orange juice into the cups. If the height of the orange juice inside the cup is about 7 inches, then how many full cups can he fill with orange juice? (Note: There are 231 cubic inches in 1 gallon) *(calculator)*

A) 5 cups
B) 6 cups
C) 7 cups
D) 8 cups

2.



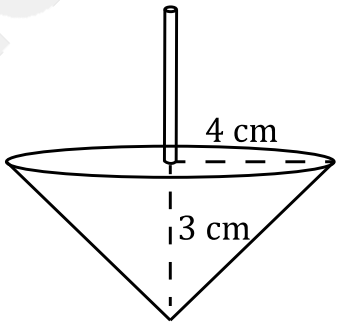
A research hospital is ordering new syringes that are in the shape of right cylinders with a radius of 2 centimeters. The vaccines that will be used in the new syringes will be administered in dosages of 124 cubic centimeters. How long does the syringe have to be, in centimeters, to ensure that the hospital can fill it with the correct dosage? *(calculator)*

A) $\frac{3}{2\pi}\ cm$
B) $\frac{31}{\pi}\ cm$
C) $\frac{2}{\pi}\ cm$
D) $\frac{124}{\pi}\ cm$

3. Carol is storing her homemade Jelly into cylindrical glass jars that has a volume of 448π cubic inches and a height of 7 inches. What is the diameter of the base of the jar? *(calculator)*

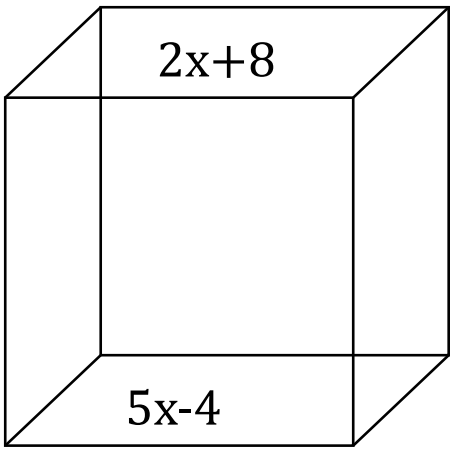
A) 31 inches
B) 16 inches
C) 448 inches
D) 8 inches

4.A group of students are making spinning tops to raise money for their non-profit charity. Right now, they have 500π cubic centimeters of wood to make the tops (excluding the cylindrical handle) whose dimensions are shown below. If each top raises $2, how much money can the students make with the available wood? Assume that no wood goes to waste in the creation of the tops. *(calculator)*



A) $124
B) $16
C) $31
D) $62

5. The dimensions of a cube are given in the diagram below. What is the volume of the cube in cubic feet? *(calculator)*



A)$1728\ ft^3$
B)$729\ ft^3$
C)$4096\ ft^3$
D)$256\ ft^3$

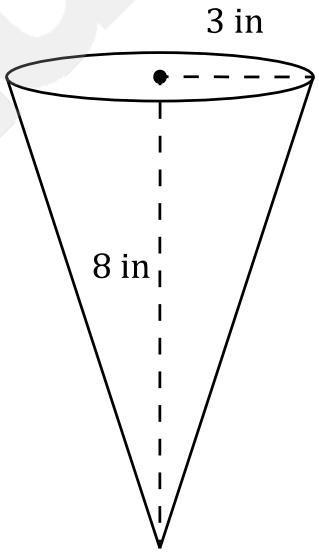
6. A sports center has 40 basketballs. If Each basketball was placed side by side, how long would the line of basketballs be if each ball has a volume of $121.5\pi\ in^3$. *(calculator)*

A) 360 feet
B) 4.5 feet
C)30 feet
D) 9 feet

7. Jamie has a pan in the shape of a rectangular prism that is 15 inches long, 5 inches wide, and 7 inches tall. She packs 450 square inches of dough into the pan leaving room at the top for the dough to rise. How far away is the top of the dough from the top of the pan, before baking? *(calculator)*

A) 6 inches
B) 2 inches
C) 1.5 inches
D) 1 inch

8. Sugar Boys Ice Cream makes homemade waffle cones in the shape of right circular cones as shown below. Given the measurements in the diagram, what is the volume of ice cream That could fit inside the cone? *(no calculator)*

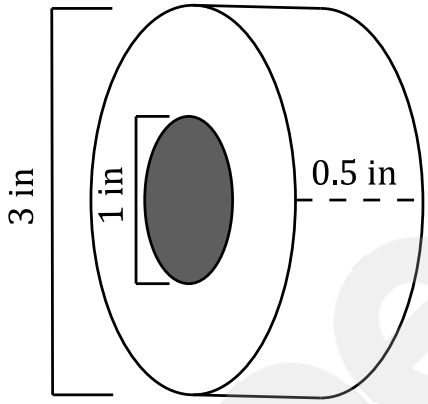


A) $24\pi\ in^3$
B) $8\pi\ in^3$
C) $144\pi\ in^3$
D) $36\pi\ in^3$

9. A student is planning on creating a model of the Pyramids of Giza for a school project. His model will have a square base with side measurements of 50 inches and a height of 75 inches. Given these measurements, what is the total volume of the student's pyramid? *(calculator)*

A) $62{,}500\ in^3$
B) $187{,}500\ in^3$
C) $4{,}270\ in^3$
D) $93{,}750\ in^3$

10. A skateboard shop is manufacturing new wheels for their skateboards with the dimensions below. What is the volume of the wheel. (Note: There is a cylindrical hole in the middle of the wheel.) *(calculator)*



A) $0.125\pi\ in^3$
B) $3\pi\ in^3$
C) $1.125\pi\ in^3$
D) $\pi\ in^3$