

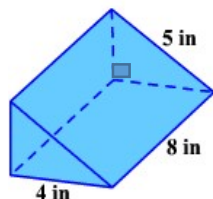
Formal Geometry

11.2 Worksheet

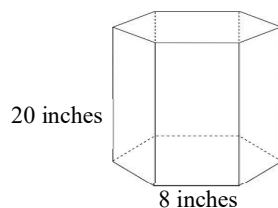
Show all work on your own paper.

For #1 – 3, find the volume of each shape. Exact answers only (no decimals.)

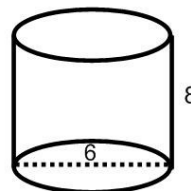
1)



2) regular hexagonal prism



3)



For #4 – 7: Not-On-Your-Belly Low-Sugar Jelly comes in 2 different jars at 2 different prices. The larger jar, with a height of 9 inches and radius of 3 inches, costs \$6.25. The smaller jar is \$1.49 and has a height and radius of 7 inches and 2 inches respectively.

4) What is the price per cubic inch of jelly for the large jar?

5) What is the price per cubic inch of jelly for the smaller jar?

6) A recipe calls for exactly 500 cubic inches of jelly and there is none at the house. Any remaining amount of jelly is wasted! How much money would need to be spent on 500 cubic inches of jelly only buying large jars?

7) How much money would need to be spent on 500 cubic inches of jelly only buying small jars?

8) A planter in the shape of a rectangular prism has a length of 36 inches, a height of 7 inches, and a width of 18 inches. The planter needs to be filled to 1 inches below the top. Harold purchases 2.5 **cubic feet** of soil to fill the planter. How much extra soil (in cubic feet) will Harold have after filling the planter with soil up to 1 inch below the top?

9) You want to design a cylindrical container for paint that has a volume of 120 in^3 , and you want the height of the container to be 3 times the radius. To the nearest hundredth of an inch, find the radius of the container.

10) A cylindrical can has a volume of 363 cm^3 and a diameter of 9 cm. Find the height, to the nearest cm.

11) A cylinder has a volume of 162π cubic inches and a diameter of 6 inches. What is the surface area? Exact answers only (no decimals.)

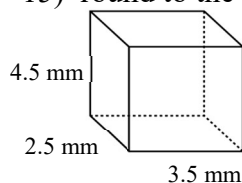
12) A cube has an edge of 5 mm. Find the SA and V of the cube.

13) A cube has a SA of 24 mm^2 . Find the V of the cube.

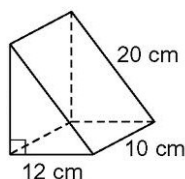
14) The diagonal of one face of a cube is $3\sqrt{2}$ in. Find the SA of the cube.

For #15 – 17, find the surface area of each shape.

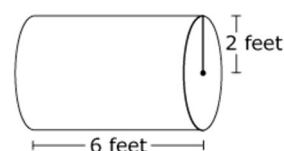
15) round to the nearest tenth



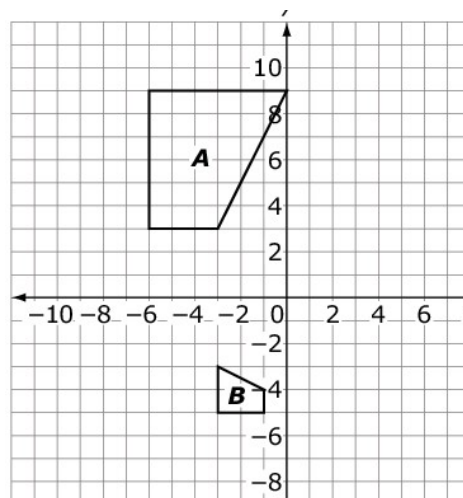
16) exact answer



17) exact answer



18) Consider the two trapezoids shown to the right. Describe three transformations that map trapezoid A onto trapezoid B. Be specific for each transformation, including the order in which they should be performed.



19) Suppose $\angle A$ is an angle such that $\cos A < \sin A$. Select **all** angle measure that are possible values for $\angle A$ from the list below:
25, 35, 45, 55, 65, 75

Answers:

- | | | | | |
|--|--------------------------------|--------------------------|------------------------------|------------------------------|
| 1) 48 in^3 | 2) $1920\sqrt{3} \text{ in}^3$ | 3) $72\pi \text{ u}^3$ | 4) $\$0.02 \text{ per in}^3$ | 5) $\$0.02 \text{ per in}^3$ |
| 6) $\$12.50$ | 7) $\$8.94$ | 8) 0.25 ft^3 | 9) 2.34 in | 10) $\approx 6 \text{ cm}$ |
| 12) $SA = 150 \text{ mm}^2$; $V = 125 \text{ mm}^3$ | 13) 8 mm^3 | 14) 54 in^2 | 11) $126\pi \text{ in}^2$ | |
| 15) 71.5 mm^2 | 16) 672 cm^2 | 17) $32\pi \text{ ft}^2$ | | |

18) sample answer: First rotation trapezoid A 90 degrees counter clockwise about the origin. Then dilate trapezoid A such that $(x, y) \rightarrow \left(\frac{1}{3}x, \frac{1}{3}y\right)$. Last, translate trapezoid A such that $(x, y) \rightarrow (x, y - 3)$.

19) 55, 65, 75