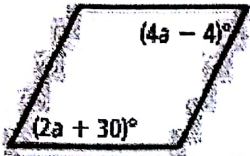


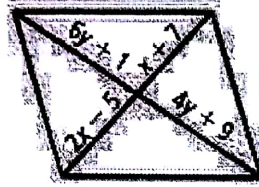
Modeling Reloop

Name Answer Key

1. The following shapes are parallelograms. Solve for the variables.

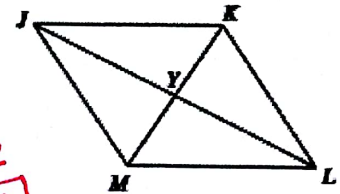


$2a = 34$
 $a = 17$



$2y = 8$
 $y = 4$
 $x = 12$

2. $KM = 23.4$
Find YM



$23.4 / 2$
 11.7

3. Two pyramids are similar. Their heights have a ratio of 4:6. What is the ratio of their volumes?

$4^3 : 6^3 = 64 : 216$

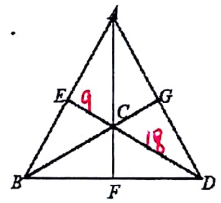
4. A cylinder has a volume of 150π cubic centimeters and a height of 6 centimeters. What is the radius of the cylinder?

$V = \pi r^2 \cdot h$
 $150 = r^2 \cdot 6$

$r = 5$
cm

5. C is the centroid of the triangle. If $DC = 18$, what is the length of EC and DE.

$EC = 9$ $DE = 27$



6. A sphere is inside a cube with side length of 10 inches. What is the difference of their volumes?

$V_{\text{Cube}} - V_{\text{Sphere}}$
 $1000 - \frac{4}{3}\pi(5)^3$

476.4 in^3

7. A square pyramid has a base with length of 8 meters. If the volume is 345 cubic meters, what is the height of the pyramid to the nearest meter?

$345 = \frac{1}{3}(8)(8)h$

$h = 16.17 \text{ m}$

8. $\overline{DM} = 3x + 6$ and $\overline{MB} = 4(x + 25)$. What is the length of \overline{DB} ?

$3x + 6 = 4x + 100$

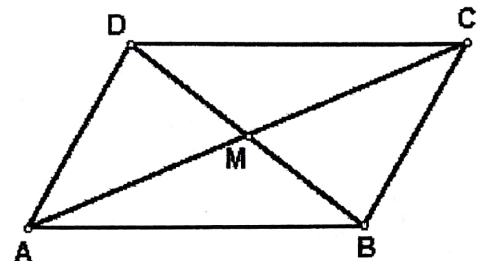
$-94 = x$

$3x + 4x + 6 = 100$

$7x + 106$

$-276 + -276$

-552

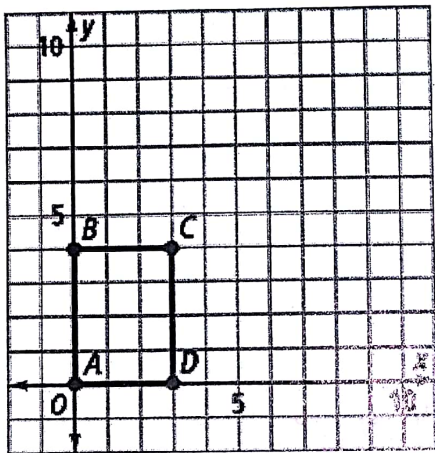


Not accurate
For measurement
but you understand the work

9. If the radius of a sphere is cut in half, how will the volume of the original sphere and the new sphere compare?

- A The volume of the new sphere will be $\frac{1}{2}$ of the volume of the original sphere.
- B The volume of the new sphere will be 2 times the volume of the original sphere.
- C The volume of the new sphere will be $\frac{1}{4}$ of the volume of the original sphere.
- D** The volume of the new sphere will be $\frac{1}{8}$ of the volume of the original sphere.

10. a) Find the volume of the shape created by the rotation around the x-axis.
 b) Find the volume of the shape created by the rotation around the y-axis.



a) $V = \pi \cdot 16 \cdot 3$
 $= 48\pi$

b) $V = \pi \cdot 9 \cdot 4$
 $= 36\pi$

11. What is the volume of a cone with a base circumference of 628.3 inches and a height of 12 inches? Round to the nearest tenth if necessary.

$r = 100$ $V = \frac{1}{3} \pi (100)^2 \cdot 12$
 $40000\pi \text{ in}^3$ or 125663.7 in^3

12. Two cross sections of a solid figure are an isosceles triangle with a height of 8 inches and a base of 16 inches and a circle with a diameter of 16 inches. Which of the following best describes the solid?

A. It is a cone with a height of 15 inches and a base radius of 8 inches.

Cone w/ radius 8 in base
 height of 8 in