

Quadrilaterals

Rectangle Area Formula	Triangle Area Formula	Trapezoid Area Formula	What is the difference between Perimeter and Area?
$A = b \cdot h$	$A = \frac{b \cdot h}{2}$	$A = 0.5 \cdot h \cdot (b_1 + b_2)$	area = space inside perimeter = add up all sides

Rhombus Area Formula:

$$\frac{d_1 \cdot d_2}{2}$$

Distance Formula:

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Ex. (5,1) and (-4, 2)

x_1, y_1 x_2, y_2

Mid-point Formula

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Ex. (3,6) and (-1,4)

x_1, y_1 x_2, y_2

$$d = \sqrt{(-4-5)^2 + (-2-1)^2} = 9.49 \quad \left(\frac{3+(-1)}{2}, \frac{6+4}{2} \right) = (1, 5)$$

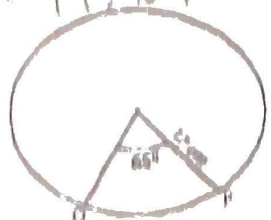
Properties of Squares, Parallelograms, Rectangles, and Rhombus



Arc Length Formula

$$s = \frac{\theta}{360} \cdot 2\pi r$$

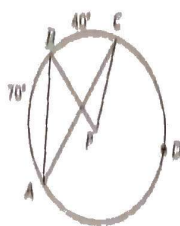
$125 \cdot 2 \cdot \pi \cdot 17$
 $= 19,29$



Area Sector Formula

$$A = \frac{\theta}{360} \cdot \pi r^2$$

$125 \cdot \pi \cdot 17^2$
 $= 163,93$



Inscribed Angle Vs. Intercepted Arc



P is the center of the circle, given the diagram find

$$m\angle BPC = 40^\circ$$

$$m\angle A = 20^\circ$$

$$m\widehat{ADC} = 360 - 70 - 40 = 250^\circ$$

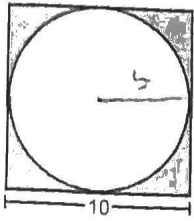
Equation of a Circle

$$(x-h)^2 + (y-k)^2 = r^2$$

(h, k) = center r = radius

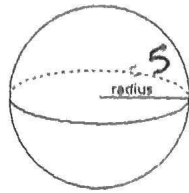


Areas of Shaded Regions



$$10^2 - 5^2 \cdot \pi = 21.46$$

Volume and Surface Area of Sphere



$$V = \frac{4 \cdot \pi \cdot r^3}{3} = \frac{4 \cdot \pi \cdot 5^3}{3}$$

$$S.A. = 4 \cdot \pi \cdot r^2 = 523.66$$

$$= 4 \cdot \pi \cdot 5^2 = 314.16$$

Volume and Surface Area Cone



$$18^2 - 7^2 = h^2$$

$$16.58 = h$$

$$V = \frac{\pi \cdot r^2 \cdot h}{3} = \frac{\pi \cdot 7^2 \cdot 16.58}{3} = 850.76$$

$$S.A. = \pi \cdot r \cdot s + \pi \cdot r^2$$

$$= \pi \cdot 7 \cdot 18 + \pi \cdot 7^2 = 549.78$$

Volume and Surface Area Cylinder

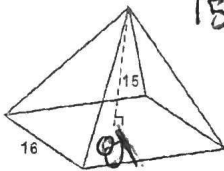


$$V = \pi \cdot r^2 \cdot H = \pi \cdot 5^2 \cdot 10 = 785.4$$

$$S.A. = 2 \cdot \pi \cdot r^2 + 2 \cdot \pi \cdot r \cdot H$$

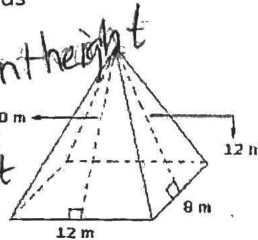
$$= 2 \cdot \pi \cdot 5^2 + 2 \cdot \pi \cdot 5 \cdot 10 = 471.24$$

Volume and Surface Area Pyramids



$$15^2 + 8^2 = \text{slant height}$$

$$17 = \text{slant height}$$

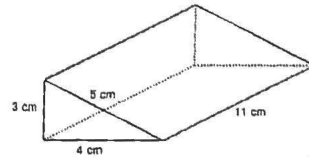


$$V = \frac{16^2 \cdot 15}{3} = 1280$$

$$V = \frac{12 \cdot 8 \cdot 10}{3} = 320$$

$$S.A. = (16 \cdot 16) + 2(16)(17) = 800$$

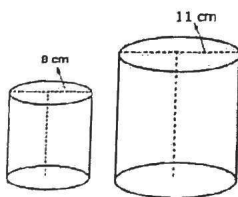
Volume and Surface Area of Triangular Prism



$$V = .5 \cdot 3 \cdot 4 \cdot 11 = 66$$

$$S.A. = 3 \cdot 4 + 4 \cdot 11 + 3 \cdot 11 + 5 \cdot 11 = 144$$

Scale Factors for Similar Figures



$$\text{sides} = \frac{11}{8}$$

$$\text{areas} = \left(\frac{11}{8}\right)^2 = \frac{121}{64}$$

$$\text{volume} = \left(\frac{11}{8}\right)^3 = \frac{1331}{512}$$

Multiplication Counting Principal - Choices

Multiply Together

In a group of 55 students, 15 own a dog, 19 own a cat, and 7 own both. Find the probability that a student randomly picked from this group owns either a cat or dog or both? Neither?

Conditional probability Formula

Probability of 1st and 2nd

Probability of first