EDUCATIONAL ASSIGNMENT for JOSEPH JOHN WUNDERLICH for 11th grade
This assignment covers the following Educational Objectives (Subjects marked with a "■" are the main subject, and those marked with an "☐" are secondary subjects):
- ■ Geometry

Solve the following problems. Use a pencil.

1. The sum of the areas of two squares is 85. If the sides of both squares have integer lengths, what is the (least) possible value for the length of a side of the smaller square?

    (A) 1
    →(B) 2
    (C) 6
    (D) 7
    (E) 9

    $$\overset{x}{(1 \cdot 1 = 1)} + (\overset{y}{84}) = 85$$
    $$(2 \cdot 2 = 4) + (9 \cdot 9 = 81) = 85 \checkmark$$

2. What is the radius of a circle whose circumference is π?

    →(A) $\frac{1}{2}$

    (B) 1

    (C) $\frac{\pi}{2}$

    (D) π

    (E) 2π

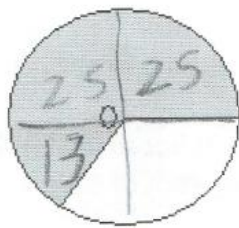   Circumference $= \pi d = \pi \cdot 2r$

    $7 \cdot 4 = \boxed{28}$

3. In the figure above, A, B, and C lie on the same line. B is the center of the smaller circle, and C is the center of the larger circle. If the radius of the smaller circle is 7, what is the diameter of the larger circle?

Handwritten work near the circle diagram:
25 (with shaded sectors labeled 25, 25, 13)

$$\begin{array}{r} 25 \\ 25 \\ +13 \\ \hline 63\ aprox \end{array}$$

4. *O* is the center of the circle above. Approximately what percent of the circle is shaded?

   (A) 25%
   (B) 37%
   (C) 50%
→ (D) 67%
   (E) 75%

5. The volume of a right circular cylinder is 343π cubic centimeters. If the height and base radius of the cylinder are equal, what is the base radius of the cylinder?

   (A) 3 centimeters $= 27\pi$
   (B) 5 centimeters $= 125\pi$
→ (C) 7 centimeters $= 343\pi$
   (D) 15 centimeters
   (E) 25 centimeters

$V = 343\pi$

$V = \pi r^2 h$