1. Find the perimeter and area of each trapezoid. Show work. Exact answers (unit: cm)

   \[ P = \frac{44 + 110\sqrt{3}}{2} \text{ cm} \]
   \[ A = 170 \text{ cm}^2 \]

   \[ P = (105 + 15\sqrt{3}) \text{ cm} \]
   \[ A = \frac{1125\sqrt{3}}{2} \text{ cm}^2 \]

   \[ P = (59 + 5\sqrt{13}) \text{ cm} \]
   \[ A = 276 \text{ cm}^2 \]

2. The area of a trapezoid is 180 cm². The height is 12 cm and the length of its shorter base is 11 cm. Find the length of the longer base of the trapezoid. Show work.

   \[ \frac{180}{6} = 30 - 11 = 19 \text{ cm} \]

3. The area of a trapezoid is 276 cm². The bases are 27 cm and 21 cm. Find the height of the trapezoid. Show work.

   \[ 27 + 21 = 48 \]
   \[ \frac{276}{48} = 5\frac{3}{4} \text{ cm} \]
   \[ 1\frac{1}{2} \text{ cm} \]
4. In a right trapezoid the other base angle measures 45° and the length of its bases are 11 cm and 7 cm. Sketch.

A. What is the perimeter of the trapezoid? Show work

\[(72 + 4\sqrt{2}) \text{ cm}\]

B. What is the area of the trapezoid? Show work

\[36 \text{ cm}^2\]

5. Find the perimeter and area of the trapezoid. Show work

\[P = 46 \text{ in}, \quad A = 14\sqrt{15} \text{ in}^2\]

E. p. 273, 29-31 (Sketch, exact simplified area) Show work.

\[
\begin{align*}
A &= 5.5\sqrt{3} \text{ cm}^2 \\
A &= \frac{5\sqrt{2}}{2} \cdot \frac{5\sqrt{2}}{2} \cdot \frac{10\sqrt{5}}{3} \cdot 10 = \frac{100\sqrt{3}}{3} \text{ m}^2
\end{align*}
\]
Area of a circle = $\pi r^2$

\[ A = \pi \cdot 7^2 \]
\[ A = 49\pi \text{ cm}^2 \]
\[ A \approx 153.94 \text{ cm}^2 \]

Circumference of a circle = $\pi d$ or $C = 2\pi r$

\[ d = 14 \]
\[ C = 14\pi \text{ cm} \]
\[ C \approx 43.98 \text{ cm} \]

Note: The circumference of a circle is $\approx 6$ radii
Ex 1: Find the exact area of a circle given \( C = 18\pi \text{ cm} \).

\[
18\pi = \pi d \quad \Rightarrow \quad d = \frac{18}{\pi} \quad A = \pi r^2
\]

\[
r = 9 \quad A = \pi \cdot 9^2 \approx 254.47 \text{ cm}^2
\]

Ex. 2: Find the exact \( C \) and \( A \) of a circle given \( r = 6\pi \text{ cm} \).

\[
C = 2\pi r = \pi d
\]

\[
d = 12\pi
\]

\[
C = 12\pi \cdot \pi = A = \pi \cdot 36\pi^2
\]

\[
C \approx 118.44 \text{ cm} \quad A \approx 1,116.23 \text{ cm}^2
\]

Ex. 3: Find the exact \( r \) and \( d \) of a circle given \( C = 36 \text{ cm} \).

\[
36 = \pi d
\]

\[
\frac{36}{\pi} = d
\]

\[
d = \frac{36}{\pi} \text{ cm} \approx 11.46 \text{ cm}
\]

\[
r = \frac{1}{2} \cdot \frac{36}{\pi} = \frac{18}{\pi} \text{ cm} \approx 5.73 \text{ cm}
\]

H.W. pg. 282: 1-8, 13a & b, 14,15,17,23

pg. 288: 1-10

(Show work)
1 orbit = 1 circumference

\[ C = \pi d \]

\[ C = 16,800\pi \text{ km} \approx 52,778.76 \text{ km} \]

\[ \frac{52,778.76 \text{ km}}{12 \text{ hrs.}} \]

Speed \approx 4,398.23 \text{ km/hr}