19. [12 pts] Find both the area and the perimeter of the figure on the board, rounding to the nearest tenth if necessary. Show clear work, and tell which is which. (trapezoid with quarter circle removed)

\[
\text{area} = \text{area of trap} - \text{area of } \frac{1}{4} \text{ circle}
\]
\[
= \frac{1}{2} (7 + 3)(7) - \frac{1}{4} \pi (3)^2
\]
\[
= 27.9 \text{ m}^2
\]

\[
\text{perim} = 3 + 4 + \frac{1}{4} \text{ circumference} + 4 + \text{ slant}
\]
\[
= \frac{1}{4} (2\pi \cdot 3)
\]
\[
= 4.7
\]

\[
\text{perim} = 19.7 \text{ m}
\]

20. (a) [2 pts] Convert 4.56 cg to dag.

\[
0.00456 \text{ dag}
\]

(b) [3 pts] Convert 78.9 square feet to square inches, rounding to the nearest tenth if needed.

\[
78.9 \text{ ft}^2 \times \frac{12 \text{ in}}{1 \text{ ft}} \times \frac{12 \text{ in}}{1 \text{ ft}} = 11,361.6 \text{ in}^2
\]

(c) [3 pts] Convert 15 miles per hour to feet per second, rounding to the nearest tenth if needed.

\[
15 \text{ miles} \div 1 \text{ hr} \times \frac{1 \text{ hr}}{60 \text{ min}} \times \frac{1 \text{ min}}{60 \text{ sec}} \times \frac{5280 \text{ ft}}{1 \text{ mile}} = 3264 \text{ ft/sec}
\]

(d) [5 pts] I lost 32 pounds in 17 weeks this semester. How many ounces per hour is that? Round to the nearest tenth; show clear work.

\[
32 \text{ lbs} \div 17 \text{ weeks} \times \frac{1 \text{ week}}{7 \text{ days}} \times \frac{1 \text{ day}}{24 \text{ hrs}} \times \frac{16 \text{ oz}}{1 \text{ lb}} = 203 \text{ oz/hour}
\]