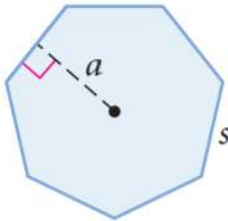Lesson 8.4 Assignment   Name:_____
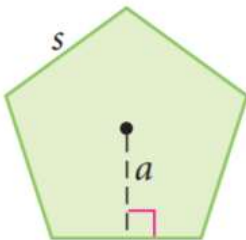
In Exercises 1-8, use the Regular
Polygon Area Conjecture to find the
unknown length accurate to the nearest
unit, or the unknown area accurate to the
nearest square unit. Recall that the
symbol ≈ is used for measurements or
calculations that are approximations.

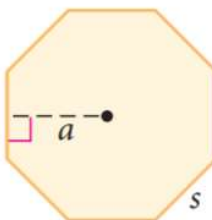1) $A \approx$ _____
   $s = 24$ cm
   $a \approx 24.9$ cm

2) $a \approx$ _____
   $s = 107.5$ cm
   $A \approx 19{,}887.5$ cm^2

3) $P \approx$ _____
   $a = 38.6$ cm
   $A \approx 4940.8$ cm^2

4) Regular pentagon: $a = 3$ cm and $s \approx$ 4.4 cm, $A \approx$ _____
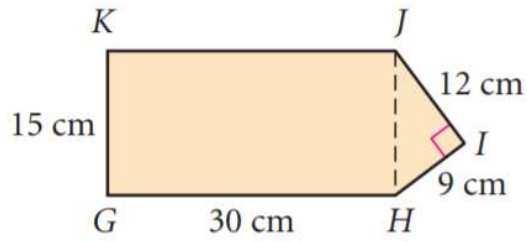
5) Regular nonagon: $a = 9.6$ cm and $A \approx 302.4$ cm^2, $P \approx$ _____

6) Regular n-gon: $a = 12$ cm and $P \approx$ 81.6 cm, $A \approx$ _____

7) Find the approximate perimeter of a regular polygon if $a = 9$ m and $A \approx$ 259.2 m^2.

8) Find the approximate length of each side of a regular n-gon if $a = 80$ feet, $n = 20$, and $A \approx 20{,}000$ square feet.

9) *GHJK* is a rectangle. Find the area of pentagon *GHIJK*.

K   J

12 cm

15 cm   I

9 cm

G   30 cm   H

10) *FELA* and *CDLB* are parallelograms. Find the area of the shaded region.

A |←————— 32 cm —————→| B   L

18 cm

26 cm   20 cm

24 cm

C   D

F   E

|←————————— 44 cm —————————→|