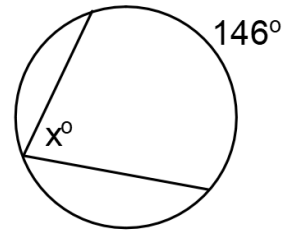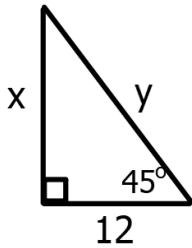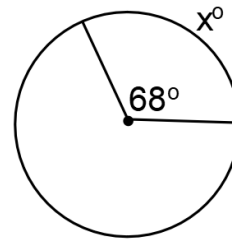1. Solve for x. and y.

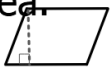2. Solve for x.
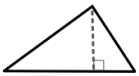

3. Solve for x and y.
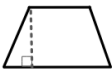

4. Solve for x.

11.1 - 11.3 Review

1. Match the picture with the correct formula that would be used to find the area.

$$A = \frac{1}{2}d_1d_2$$
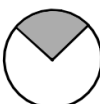
$$A = \frac{x}{360} \cdot \pi\, r^2$$
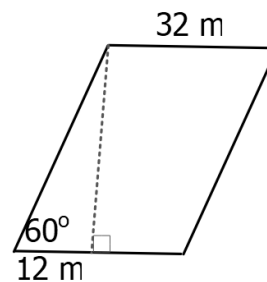
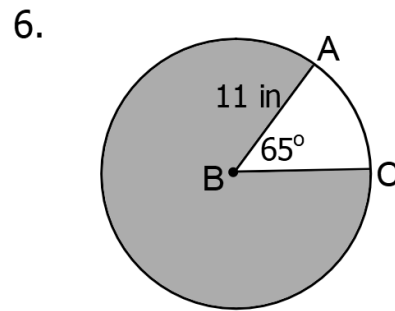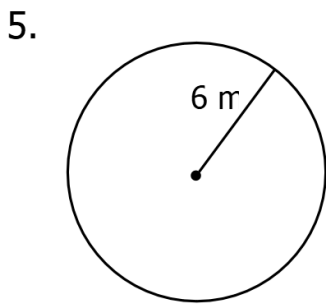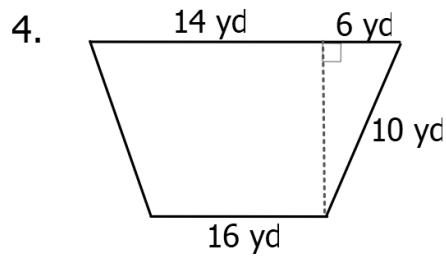$$A = \frac{1}{2}h \cdot (b_1 + b_2)$$

$$A = \pi r^2$$

$$A = bh$$

$$A = \frac{1}{2}bh$$

2. Find the area.

11.1 - 11.3 Review

Find the area of each figure.

3.

5 ft

8 ft

21.5 ft

15 ft

4.

14 yd   6 yd

10 yd

16 yd

5.

6 m

6.

A

11 in

65°

B   C

---
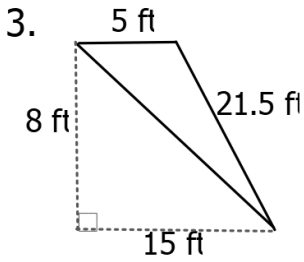
p. 807   11.4 Areas of Regular Polygons and Composite Figures
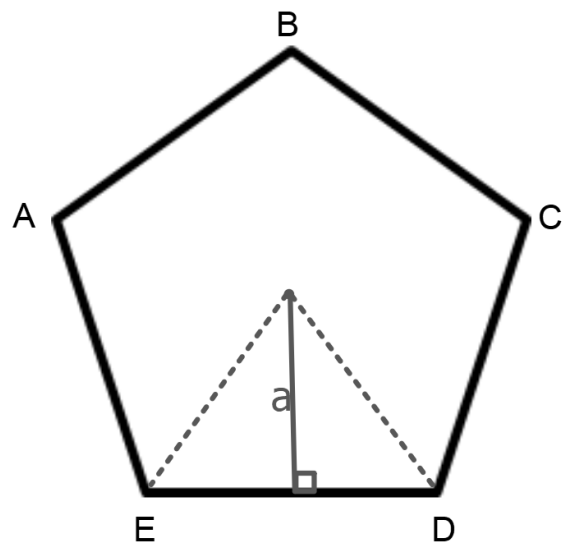
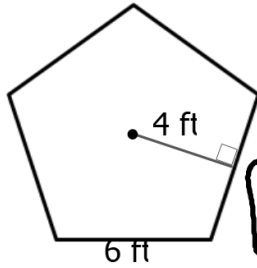|	
*__Apothem__ - a segment drawn from the <u>center</u> of a regular polygon <u>perpendicular</u> to a side of the polygon.	B
*A **central angle** of a regular polygon has its <u>vertex</u> at the <u>center</u> and its sides pass through consecutive <u>vertices</u> of the polygon.	A C
*The measure of each central angle of a regular n-gon is $\frac{360}{n}$.	a
Area of a Regular Polygon $$A = \tfrac{1}{2}aP$$	E D

*P = perimeter (add all sides)

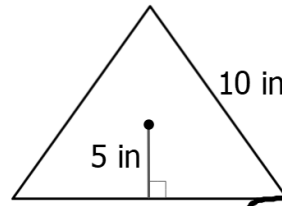**Example 1:** Find the area of each regular polygon. Round to the nearest tenth.

1.

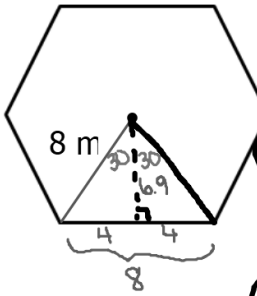
$A = \frac{1}{2}aP$
$= \frac{1}{2}(4)(30)$
$A = 60ft^2$

4 ft

6 ft

2.

10 in

5 in

$A = \frac{1}{2}aP$
$= \frac{1}{2}(5)(30)$
$A = 75in^2$

3.

8 m

30 30
6.9

4   4

8

① $\frac{360}{6} = 60°$

→ take half: 30°

② $8 \diagup x$ $x = 6.9$
  $y = 4$
  y

③ $A = \frac{1}{2}aP$
  $= \frac{1}{2}(6.9)(48)$
  $A = 165.6m^2$

4.

6 cm

45 45
4.2

4.2   4.2

8.4

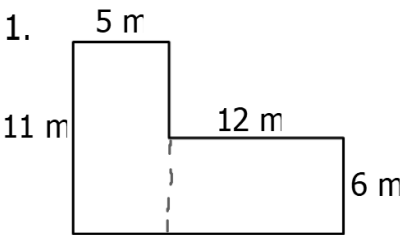① $\frac{360}{4} = 90°$

→ half: 45°

② $x \diagup 6$ $x = 4.2$
  $y = 4.2$
  y
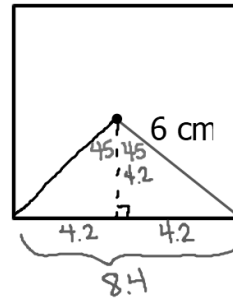
③ $A = \frac{1}{2}aP$
  $= \frac{1}{2}(4.2)(33.6)$
  $A = 70.6cm^2$

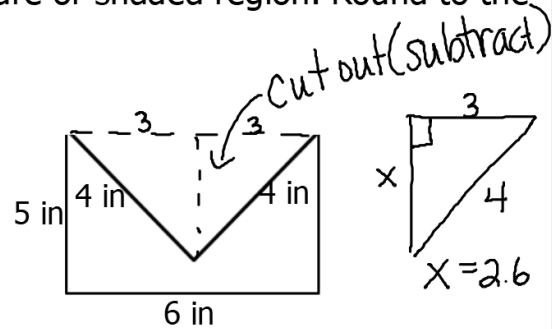**Example 2:** Find the area of each composite figure or shaded region. Round to the nearest tenth.

1.

5 m

11 m

12 m

6 m

$A = bh + bh$
$= 5(11) + 12(6)$
$A = 127m^2$

2.

cut out (subtract)

3   3   3

5 in   4 in   4 in   x   4

6 in $x = 2.6$
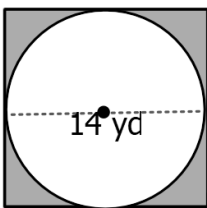
$A = bh - \frac{1}{2}bh$
$= 5(6) - \frac{1}{2}(6)(2.6)$
$A = 22.2in^2$

3.

14 yd

$A = bh - \pi r^2$
$= (14)(14) - \pi(7)^2$
$A = 42.1yd^2$

4.

13 cm

10 cm

cut out

half a circle
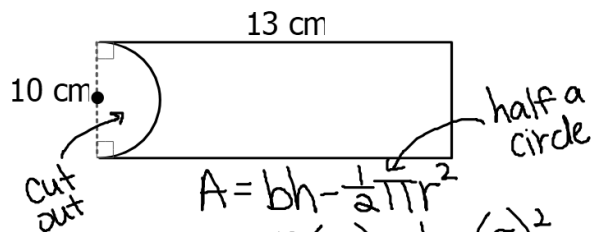
$A = bh - \frac{1}{2}\pi r^2$
$= 13(10) - \frac{1}{2}\pi(5)^2$
$A = 90.7cm^2$