

## Areas of Regular Polygons

For use after Section 11-4

$O$  is the center of a regular  $n$ -sided polygon with consecutive vertices  $A$  and  $B$ .

1. If  $\angle AOB$  has the given measure, find the value of  $n$ .
    - a.  $m\angle AOB = 45$ ,  $n =$  \_\_\_\_\_
    - b.  $m\angle AOB = 30$ ,  $n =$  \_\_\_\_\_
  2. Find the measure of  $\angle AOB$  for the given value of  $n$ .
    - a.  $n = 10$ ,  $m\angle AOB =$  \_\_\_\_\_
    - b.  $n = 15$ ,  $m\angle AOB =$  \_\_\_\_\_
- Find the apothem of each regular polygon.**
3. Hexagon with radius 8 \_\_\_\_\_
  4. Square with side 10 \_\_\_\_\_
  5. Equilateral triangle with radius  $4\sqrt{3}$  \_\_\_\_\_
- Find the radius of each regular polygon.**
6. Square with area 64 \_\_\_\_\_
  7. Triangle with apothem  $12\sqrt{3}$  \_\_\_\_\_
  8. Triangle with radius  $4\sqrt{3}$  \_\_\_\_\_
  9. Hexagon with radius 8 \_\_\_\_\_
- Find the perimeter of each regular polygon.**
10. A square with perimeter 44 \_\_\_\_\_
  11. A square with apothem 4 \_\_\_\_\_
  12. A square with radius 6 \_\_\_\_\_
  13. A regular pentagon with perimeter 60 and apothem  $x$  \_\_\_\_\_
  14. A regular 12-sided polygon with side  $s$  and apothem  $a$  \_\_\_\_\_
  15. A regular hexagon with sides 12 \_\_\_\_\_
  16. A regular hexagon with radius 8 \_\_\_\_\_
  17. An equilateral triangle with radius 6 \_\_\_\_\_
  18. An equiangular triangle with perimeter 36 \_\_\_\_\_
  19. An equilateral triangle with apothem 2 \_\_\_\_\_

<p>1) _____</p> <p>2) _____</p> <p>3) _____</p> <p>4) _____</p>		<p>6)</p> <p>8)</p> <p>10)</p> <p>12)</p> <p>14)</p> <p>16)</p>	<p>7)</p> <p>9)</p> <p>11)</p> <p>13)</p> <p>15)</p> <p>17)</p>
<p>1) _____</p> <p>2) _____</p> <p>3) _____</p> <p>4) _____</p> <p>5) _____</p>		<p>6)</p> <p>8)</p> <p>10)</p> <p>12)</p> <p>14)</p> <p>16)</p>	<p>7)</p> <p>9)</p> <p>11)</p> <p>13)</p> <p>15)</p> <p>17)</p>