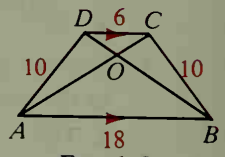
Chapter 11

Indicate the best answer by writing the appropriate letter.

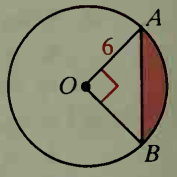
1. One side of a rectangle is 14 and the perimeter is 44. What is the area?
   a. 112 **b.** 210 **c.** 224 **d.** 420
2. What is the area of a square inscribed in a circle with radius 8?
   a. 32 **b.** 64 **c.** $64\sqrt{2}$ **d.** 128
3. The area of a circle is 25π. What is its circumference?
   a. 5π **b.** 10π **c.** 12.5π **d.** 50π
4. What is the area of a trapezoid with bases 7 and 8 and height 6?
   a. 90 **b.** 336 **c.** 45 **d.** 168
5. A parallelogram and a triangle have equal areas. The base and height of the parallelogram are 12 and 9. If the base of the triangle is 36, find its height.
   a. 3 **b.** 6 **c.** 9 **d.** 12



Exs. 6–8

6. What is the area of trapezoid $ABCD$?
   a. 96 **b.** 120 **c.** 144 **d.** 192
7. What is the ratio of the areas of $\triangle AOB$ and $\triangle COD$?
   a. $\sqrt{3}:1$ **b.** $\sqrt{3}:3$ **c.** $3:1$ **d.** $9:1$
8. What is the ratio of the areas of $\triangle AOB$ and $\triangle AOD$?
   a. $\sqrt{3}:1$ **b.** $3:1$ **c.** $9:1$ **d.** cannot be determined

9. What is the area of a regular hexagon inscribed in a circle with radius 8?
   a. $16\sqrt{3}$ **b.** $96\sqrt{3}$ **c.** $128\sqrt{3}$ **d.** $192\sqrt{3}$
10. In the diagram, what is the length of $\overset{\frown}{AB}$?
    a. $6\sqrt{2}$ **b.** 6π **c.** 3π **d.** 36π
11. In the diagram, what is the area of the shaded region?
    a. $9\pi - 36$ **b.** $12\pi - 36$ **c.** $9\pi - 18$ **d.** $12\pi - 18$
12. If a point is chosen at random in the interior of $\odot O$, what is the probability that the point is inside $\triangle AOB$?
    a. $\frac{2}{\pi}$ **b.** $\frac{1}{4}$ **c.** $\frac{3}{2\pi}$ **d.** $\frac{1}{2\pi}$



Exs. 10–12

13. A rhombus has diagonals 6 and 8. What is its area?
    a. 12 **b.** 24 **c.** 36 **d.** 48
14. What is the area of a circle with diameter 12?
    a. $24\pi^2$ **b.** 12π **c.** 144π **d.** 36π
15. What is the area of an equilateral triangle with perimeter 24?
    a. $64\sqrt{3}$ **b.** $32\sqrt{3}$ **c.** $\frac{32\sqrt{3}}{3}$ **d.** $16\sqrt{3}$
16. What is the area of a triangle with sides 15, 15, and 24?
    a. 54 **b.** 108 **c.** 180 **d.** 216