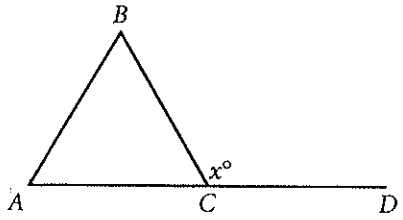
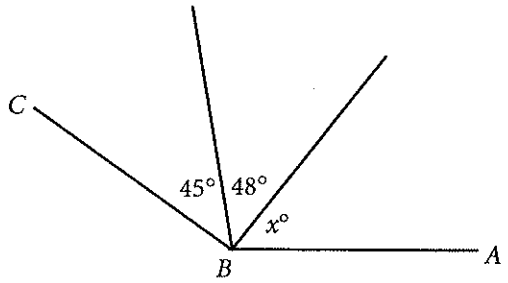
PRACTICE QUESTIONS



1. In the figure above, segments AB, BC, CD, and AC are all equal. What is the value of x?

   (A) 30
   (B) 45
   (C) 60
   (D) 90
   (E) 120



2. If the measure of angle ABC is 145°, what is the value of x?

   (A) 39
   (B) 45
   (C) 52
   (D) 55
   (E) 62

3. If the perimeter of a square is 32 meters, what is the area of the square, in square meters?

   (A) 16
   (B) 32
   (C) 48
   (D) 56
   (E) 64

4. In triangle XYZ the measure of angle Y is twice the measure of angle X, and the measure of Z is three times the measure of angle X. What is the degree measure of angle Y?

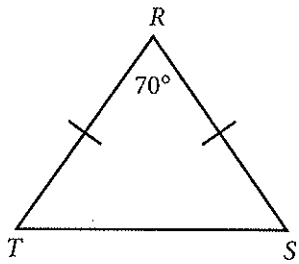
   (A) 15
   (B) 30
   (C) 45
   (D) 60
   (E) 90

5. The perimeter of triangle ABC is 24. If $AB = 9$ and $BC = 7$, then $AC =$

   (A) 6
   (B) 8
   (C) 10
   (D) 15
   (E) 17

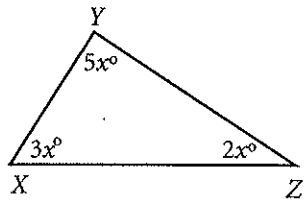
6. If the perimeter of an equilateral triangle is 150, what is the length of one of its sides?

   (A) 35
   (B) 35
   (C) 50
   (D) 75
   (E) 100



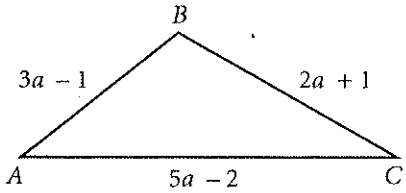
7. In triangle RST, if $RS = RT$, what is the degree measure of angle S?

   (A) 40
   (B) 55
   (C) 70
   (D) 110
   (E) It cannot be determined from the information given.



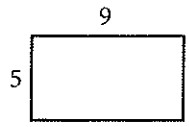
8. In triangle XYZ, what is the degree measure of angle YXZ?

   (A) 18
   (B) 36
   (C) 54
   (D) 72
   (E) 90



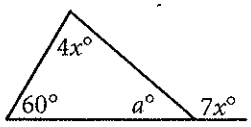
9. If the perimeter of triangle ABC is 18, what is the length of AC?

(A) 2
(B) 4
(C) 5
(D) 6
(E) 8



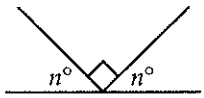
10. What is the area, in square units, of a square that has the same perimeter as the rectangle above?

(A) 25
(B) 36
(C) 49
(D) 64
(E) 81



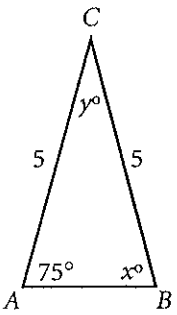
11. What is the value of a in the figure above?

(A) 20
(B) 40
(C) 60
(D) 80
(E) 140



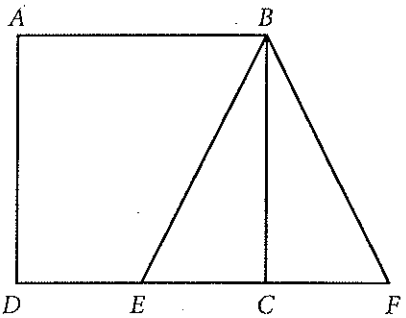
12. In the figure above, what is the value of n?

(A) 30
(B) 60
(C) 45
(D) 90
(E) 135



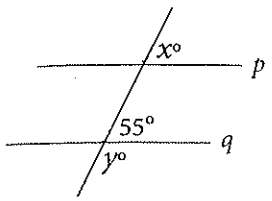
13. In the figure above, what is the value of $x - y$?

(A) 30
(B) 45
(C) 75
(D) 105
(E) 150



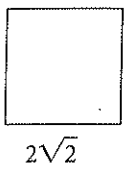
14. A square and a triangle are drawn together as shown above. The perimeter of the square is 64 and $DC = EF$. What is the area of triangle BEF?

(A) 32
(B) 64
(C) 128
(D) 256
(E) It cannot be determined from the information given.



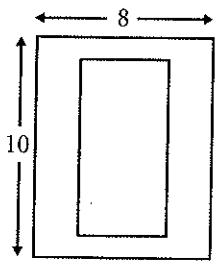
15. If line p is parallel to line q, what is the value of $x + y$?

(A) 90
(B) 110
(C) 125
(D) 180
(E) 250



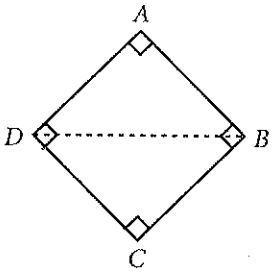
16. What is the area of the square above?

(A) 4
(B) 8
(C) $4\sqrt{2}$
(D) 16
(E) 24



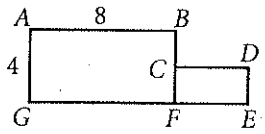
17. What is the area of the frame in the figure above if the inside picture has a length of 8 and a width of 4?

(A) 4
(B) 8
(C) 16
(D) 24
(E) 48



18. In the figure above, $ABCD$ is a square and the area of triangle ABD is 8. What is the area of square $ABCD$?

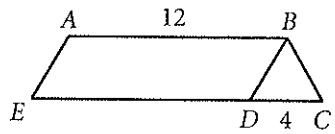
(A) 2
(B) 4
(C) 8
(D) 16
(E) 64



Note: Figure not drawn to scale.

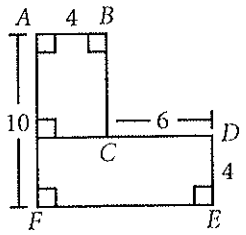
19. In the figure above, $ABFG$ and $CDEF$ are rectangles, CD bisects BF, and EF has a length of 2. What is the area of the entire figure?

(A) 4
(B) 16
(C) 32
(D) 36
(E) 72



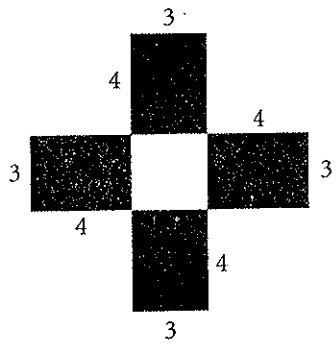
20. In the figure above, $ABDE$ is a parallelogram and BCD is an equilateral triangle. What is the perimeter of $ABCE$?

(A) 12
(B) 16
(C) 24
(D) 32
(E) 36



21. In the figure above, what is the perimeter of *ABCDEF*?

(A) 14
(B) 24
(C) 28
(D) 38
(E) 40



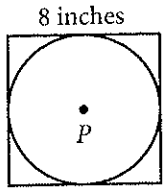
22. If the shaded regions are 4 rectangles, what is the area of the unshaded region?

(A) 9
(B) 12
(C) 16
(D) 19
(E) 20

Note: Figure not drawn to scale.

23. In the figure above, AB is twice the length of BC, $BC = CD$ and DE is triple the length of CD. If $AE = 49$, what is the length of BD?

(A) 14
(B) 21
(C) 28
(D) 30
(E) 35

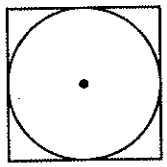


24. In the figure above, circle P is inscribed in a square with sides of length 8 inches. What is the area of the circle?

(A) 4π square inches
(B) 16 square inches
(C) 8π square inches
(D) 16π square inches
(E) 32π square inches

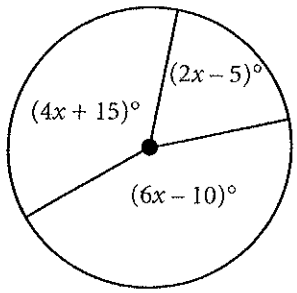
25. What is the radius of a circle whose circumference is 36π?

(A) 3
(B) 6
(C) 8
(D) 18
(E) 36



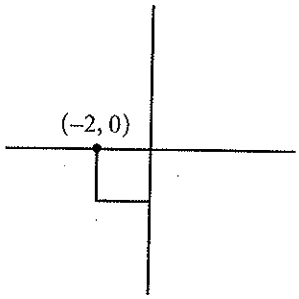
26. If the perimeter of the square is 36, what is the circumference of the circle?

(A) 6π
(B) 9π
(C) 12π
(D) 15π
(E) 18π



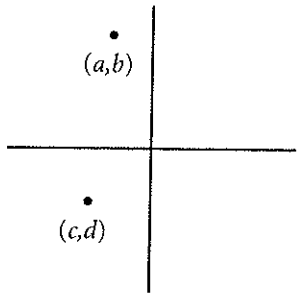
27. In the figure above, what is the value of x?

(A) 15
(B) 30
(C) 55
(D) 70
(E) 135



28. In the figure above, a square is graphed on the coordinate plane. If the coordinates of one corner are (–2, 0), what is the area of the square?

(A) $\frac{1}{4}$
(B) 1
(C) 2
(D) 4
(E) 16

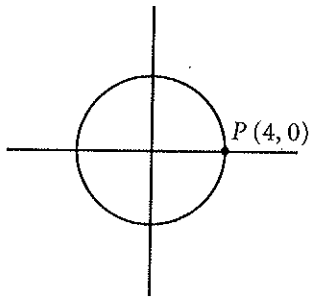


29. Points (a, b) and (c, d) are graphed in the coordinate plane as shown above. Which of the following statements must be true?

(A) $bd > ac$
(B) $c > ad$
(C) $b > acd$
(D) $bc > ad$
(E) It cannot be determined from the information given.

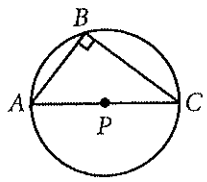
30. What is the distance from the point (0, 6) to the point (0, 8) in a standard coordinate plane?

(A) 2
(B) 7
(C) 10
(D) 12
(E) 14



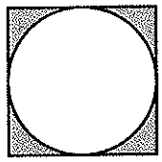
31. Circle O above has its center at the origin. If point P lies on circle O, what is the area of circle O?

(A) 4π
(B) 8π
(C) 10π
(D) 12π
(E) 16π



32. In the figure above, right triangle ABC is inscribed in circle P, with AC passing through center P. If $AB = 6$, and $BC = 8$, what is the area of the circle?

(A) 10π
(B) 14π
(C) 25π
(D) 49π
(E) 100π



33. In the figure above, a circle is inscribed within a square. If the area of the circle is 25π, what is the perimeter of the shaded region?

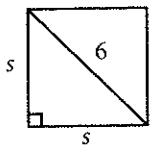
(A) $40 + 5\pi$
(B) $40 + 10\pi$
(C) $100 + 10\pi$
(D) $100 + 25\pi$
(E) $40 + 50\pi$

34. What is the slope of the line that contains points $(3, -5)$ and $(-1, 7)$?

(A) -3
(B) $-\frac{1}{3}$
(C) $-\frac{1}{4}$
(D) $\frac{1}{3}$
(E) 3

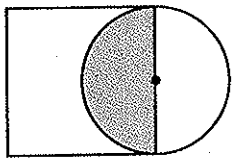
35. If the circumference of a circle is 16π, what is its area?

(A) 8π
(B) 16π
(C) 32π
(D) 64π
(E) 256π



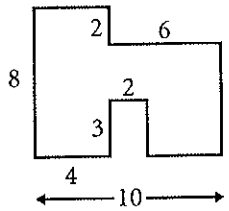
36. What is the area of the square above with diagonals of length 6?

(A) 9
(B) 12
(C) $9\sqrt{2}$
(D) 15
(E) 18



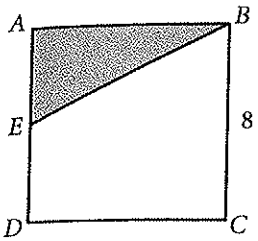
37. A square and a circle are drawn as shown above. The area of the square is 64. What is the area of the shaded region?

(A) 4π
(B) 8π
(C) 16π
(D) 32π
(E) It cannot be determined from the information given.



38. What is the area of the polygon above if each corner of the polygon is a right angle?

(A) 40
(B) 62
(C) 68
(D) 74
(E) 80



39. $ABCD$ is a square. If E is the midpoint of AD, what is the area of the shaded region?

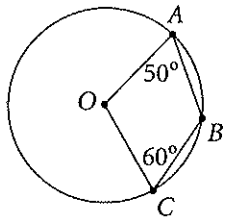
(A) 8
(B) 12
(C) 16
(D) 24
(E) 32

40. Circle A has radius $r + 1$. Circle B has radius $r + 2$. What is the positive difference between the circumference of circle B and the circumference of circle A?

(A) 1
(B) 2π
(C) $2\pi + 3$
(D) $2\pi r + 3$
(E) $2\pi(2r + 3)$

41. Erica has 8 squares of felt, each with area 16. For a certain craft project she cuts the largest circle possible from each square of felt. What is the combined area of the excess felt left over after cutting out all the circles?

(A) $4(4 - \pi)$
(B) $8(4 - \pi)$
(C) $8(\pi - 2)$
(D) $32(4 - \pi)$
(E) $8(16 - \pi)$



42. In the figure above, points A, B, and C lie on the circumference of the circle centered at O. If $\angle OAB$ measures 50° and $\angle BCO$ measures 60°, what is the degree measure of $\angle AOC$?

(A) 110
(B) 125
(C) 140
(D) 250
(E) It cannot be determined from the information given.

1. E
2. C
3. E
4. D
5. B
6. C
7. B
8. C
9. E
10. C
11. B
12. C
13. B
14. C
15. D
16. B
17. E
18. D
19. D
20. E
21. E
22. A
23. A
24. D
25. D
26. A
27. B
28. D
29. C
30. A
31. E
32. C
33. B
34. A
35. D
36. E
37. B
38. B
39. C
40. B
41. D
42. C