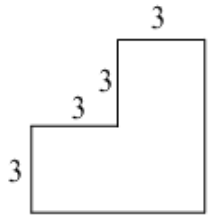
ACT Review Worksheet
Miscellaneous Geometry (area, perimeter, circumference)

Name_____
Date_____CP____

7. Adjacent segments in the hexagon below are perpendicular, and 4 segments are each 3 yards long, as marked. What is the perimeter of the hexagon, in yards?

A. 12
B. 18
C. 24
D. 27
E. 30



9. In a certain triangle, the longest side is 1 foot longer than the second longest side, and the second longest side is 1 foot longer than the shortest side. If the perimeter is 21 feet, how many feet long is the shortest side?

A. 6
B. 7
C. 8
D. 9
E. 10

9. A carpet company uses the following formula for estimating the number of square feet, A, of carpeting needed for a room x feet by y feet containing a stairway w feet by z feet with n stairs:

$$A = xy + w[z(2n-1) + 2n]$$

What is the company's estimate for the number of square feet of carpeting needed for a room that is 12 feet by 15 feet containing a stairway that is 5 feet by 5 feet with 6 stairs?

A. 441
B. 467
C. 515
D. 655
E. 675

12. Anna wants to completely cover the rectangular ceiling of her own room with soundproof tile so she can play her stereo as loudly as she wants. Her ceiling is 16 ft. long and 10 ft. wide. The tiles are 2 ft. by 2 ft. squares. How many tiles does Anna need to cover her ceiling with one layer of soundproof tiles?

F. 20
G. 26
H. 40
J. 52
K. 80

22. If the lengths of adjacent sides of a rectangular playground are represented by $3x - 4$ and $2x^2 + 5$ units, respectively, for some value of x, then which of the following expressions represents the area, in square units, of the playground?

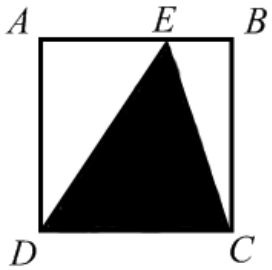
F. $4x^2 + 6x + 2$
G. $6x^3 - 20$
H. $6x^3 + 7x + 20$
J. $6x^3 - 8x^2 + 15x - 20$
K. $6x^3 + 8x^2 + 15x + 20$

23. The perimeter of a parallelogram is 72 inches, and one side measures 12 inches. What are the lengths, in inches, of the other three sides?

A. 12, 12, 36
B. 12, 18, 18
C. 12, 24, 24
D. 12, 30, 30
E. Cannot be determined

28. In the figure below, square *ABCD* has sides 12 centimeters long, and *E* is on side $\overline{AB}$. In square centimeters, what is the area of $\triangle DEC$?

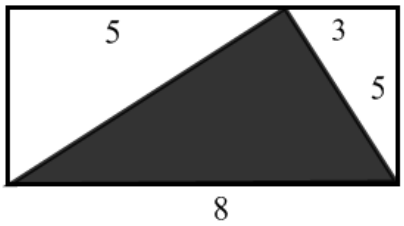
F. 36
G. 48
H. 72
J. 96
K. 14



31. Meg pounded a stake into the ground. When she attached a leash to both the stake and the dog's collar, the dog could reach 9 feet from the stake in any direction. Using 3.14 for π, what is the approximate area of the lawn, in square feet, the dog could reach from the stake?

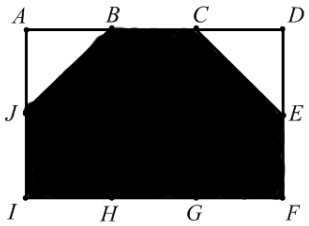
A. 28
B. 57
C. 113
D. 254
E. 283

32. The rectangle pictured below has lengths as marked in units. What is the area, in square units, of the shaded triangle?



F. 16
G. 20
H. 25
J. 32
K. 40

39. In rectangle ADFI below, the 10 labeled points are equally spaced along the perimeter. What is the ratio of the shaded area to the area of the entire rectangle?

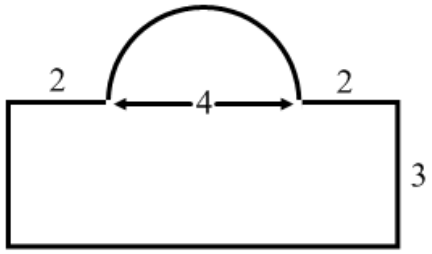


A. $\frac{7}{8}$
B. $\frac{5}{6}$
C. $\frac{4}{5}$
D. $\frac{3}{4}$
E. $\frac{2}{3}$

42. How many units long is the circumference of a circle with diameter of 8 units?

F. 4π
G. 8π
H. $4\pi^2$
J. 16π
K. $16\pi^2$

44. The figure below shows a semicircle joined to a rectangle with distances given in units. What is the area, in square units, of this figure?



F. $22 + \pi$
G. $24 + \pi$
H. $24 + 2\pi$
J. $24 + 4\pi$
K. $24 + 8\pi$

47. The distance around a circular path is 1,000 meters. Which of the following most nearly approximates the radius of the path, in meters? (Note: π = 3.14)

A. 10
B. 18
C. 32
D. 159
E. 318

60. Which of the following expresses the number of meters a contestant must travel in a 3 lap race where the course is a circle of radius R meters?

F. 3R
G. $3\pi R$
H. $3\pi R^2$
J. 6R
K. $6\pi R$

ANSWERS: 7.) C 9.) A 9.) C 12.) H 22.) J 23.) C 28.) H 31.) D 32.) G 39.) B 42.) G 44.) H 47.) D 60.) K