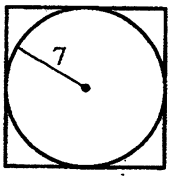
M6

MEDICAL KIT:

Geometry

Video workout 3:

38. A square is circumscribed about a circle of 7-foot radius, as shown below. What is the area of the square, in square feet?

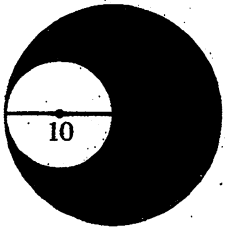


F. 49
G. 56
H. 98
J. 49π
K. 196

37. A square has sides that are the same length as the radius of a circle. If the circle has an area of 36π square units, how many units long is the perimeter of the square?

A. 18
B. 24
C. 36
D. 72
E. 324

30. The figure below shows 2 tangent circles such that the 10-centimeter diameter of the smaller circle is equal to the radius of the larger circle. What is the area, in square centimeters, of the shaded region?



F. 10
G. 75
H. 5π
J. 10π
K. 75π

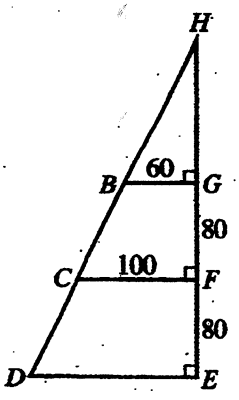
41. While viewing a satellite photograph, you notice an almost perfectly round lake. From the scale of the photograph, the lake's radius is about 200 meters. Among the following, which is the most reasonable estimate of the surface area, in square meters, of the lake?

A. 400π
B. $10{,}000\pi$
C. $20{,}000\pi$
D. $40{,}000\pi$
E. $160{,}000\pi$

DO YOUR FIGURING HERE.

Use the following information to answer questions 39–41.

In the figure below, B and C are on $\overline{HD}$ and G and F are on $\overline{HE}$. The measurements given are in inches. Both $BGFC$ and $CFED$ are trapezoids. The area, A, of a trapezoid is given by $A = \frac{1}{2}h(b_1 + b_2)$, where h is the height and b_1 and b_2 are the lengths of the 2 parallel sides.



39. What is the area of $BGFC$, in square inches?

A. 2,500
B. 5,400
C. 6,400
D. 7,000
E. 12,800

40. What is the length of $\overline{BC}$, in inches?

F. 90
G. 100
H. $\sqrt{4{,}800}$
J. $\sqrt{8{,}000}$
K. $\sqrt{16{,}400}$

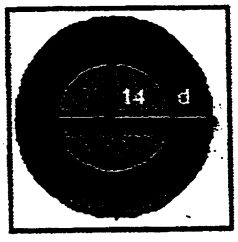
41. What is the radius, in inches, of the largest circle that can be drawn so that no point of the circle is outside $CFED$?

A. 40
B. 50
C. 60
D. 70
E. 80

53. If the diameter of a circle is tripled, the area of the resulting circle is how many times the area of the original circle?

A. 1.5
B. 2.25
C. 3
D. 6
E. 9

7. A circular swimming area has a diameter of 52 ft. The swimming area consists of a pool surrounded by a wooden deck of uniform width. The radius of the pool is 14 ft. What is the area of just the wooden deck in the swimming area?

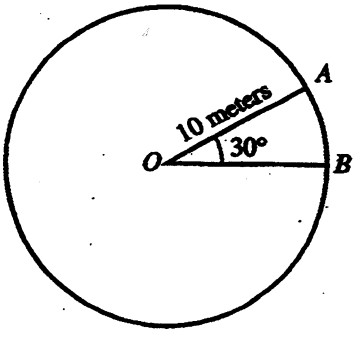


A. 872
B. 728
C. 480
D. 436
E. 615

50. What is the length, in inches, of a 144° arc of a circle whose circumference is 60 inches?

F. $\frac{36}{\pi}$
G. 12
H. 24
J. 36
K. 12π

60. In the circle below, radius $\overline{OA}$ has a length of 10 meters, and central angle $\angle AOB$ measures 30°. What is the length, in meters, of arc $\overset{\frown}{AB}$?



F. $\frac{5\pi}{3}$

G. $\frac{10\pi}{3}$

H. $\frac{5\pi}{6}$

J. 10π

K. 30π