

**M4**

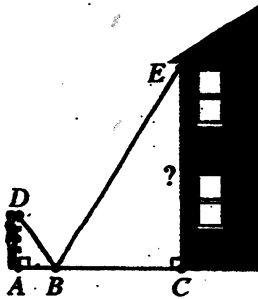
# **MEDICAL KIT:**

## **Geometry**

### ***Video workout 1:***

20. As shown in the figure below, Mr. Thompson, who is standing at point  $A$ , needs to determine the distance from point  $C$  on the ground to point  $E$  at the top of one of the second-story windows of his house. He places a mirror on the ground at point  $B$  so that when he looks in the mirror, he can see the top of the window. Mr. Thompson's eye level, at point  $D$ , is 6 ft above the ground. He notes that  $AB = 4$  ft and  $BC = 14$  ft. Approximately how many feet above the ground is the top of the second-story window?

(Note: In  $\triangle ABD$  and  $\triangle CBE$ ,  $\angle ABD$  is congruent to  $\angle CBE$ .)

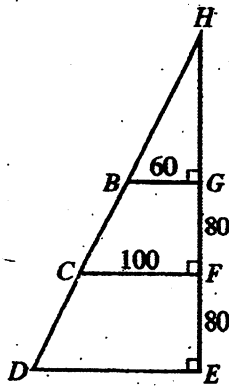


- F. 2  
 G. 10  
 H. 16  
 J. 21  
 K. 24
23. The ratio of the side lengths of 2 similar triangles is 3:5. The smaller triangle has sides that measure 5 centimeters, 7 centimeters, and 9 centimeters. What is the perimeter, in centimeters, of the larger triangle?
- A.  $12\frac{3}{5}$   
 B. 21  
 C. 35  
 D. 63  
 E. 105
28. The ratio of a side of square  $A$  to the length of rectangle  $B$  is 2:3. The ratio of a side of square  $A$  to the width of rectangle  $B$  is 2:1. What is the ratio of the area of square  $A$  to the area of rectangle  $B$ ?
- F. 2:1  
 G. 3:1  
 H. 3:2  
 J. 4:1  
 K. 4:3

32. A rectangular tabletop is 14 inches wide and 48 inches long. Which of the following is closest to the length, in inches, of the diagonal of this tabletop?

- F. 34
- G. 50
- H. 55
- J. 62
- K. 68

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

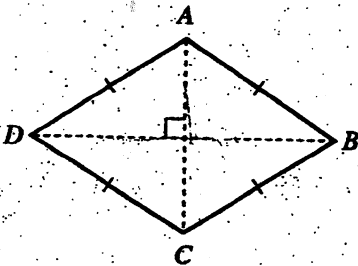
30. In a certain isosceles triangle, the measure of each of the base angles is twice the measure of the vertex angle. What is the measure, in degrees, of each of the base angles?

F.  $36^\circ$   
 G.  $60^\circ$   
 H.  $72^\circ$   
 J.  $120^\circ$   
 K.  $144^\circ$

43. In  $\triangle XYZ$ ,  $\overline{XY} \cong \overline{XZ}$  and the measure of  $\angle Y$  is  $22^\circ$ . What is the measure of  $\angle X$ ?

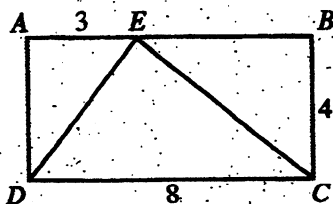
A.  $136^\circ$   
 B.  $79^\circ$   
 C.  $68^\circ$   
 D.  $44^\circ$   
 E.  $22^\circ$

44. If  $AC = 10$  feet and  $BD = 12$  feet in the rhombus  $ABCD$  shown below, what is its area, in square feet?



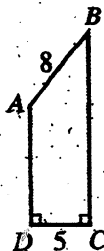
F. 11  
 G. 22  
 H. 30  
 J. 60  
 K. 120

25. In the figure below,  $E$  is a point on side  $\overline{AB}$  of rectangle  $ABCD$ . The measures given are in inches. What is the area of  $\triangle DEC$ , in square inches?



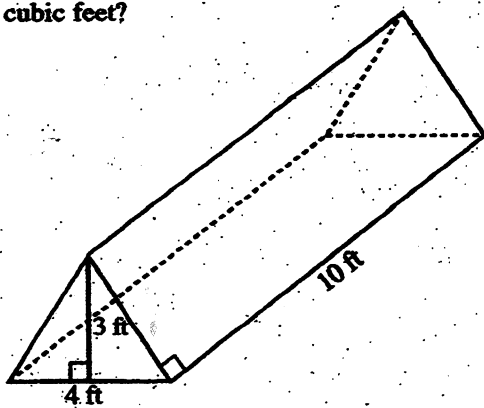
A. 10  
 B. 12  
 C. 16

39. For trapezoid  $ABCD$  shown below,  $AB = 8$  m,  $DC = 5$  m, and the perimeter is 39 m. What is the area, in square meters, of  $ABCD$ ?



- A.  $32\frac{1}{2}$
- B. 52
- C. 65
- D. 130
- E. 260

45. A right, triangular prism that is 10 feet long, 4 feet wide, and 3 feet tall is shown below. What is its volume, in cubic feet?



- A. 50
- B. 60
- C. 84
- D. 114
- E. 120

55. The measure of each interior angle of a regular  $n$ -sided polygon is  $\frac{(n-2)180^\circ}{n}$ . A regular pentagon is shown below. What is the measure of the designated angle?



- A.  $108^\circ$
- B.  $144^\circ$
- C.  $198^\circ$
- D.  $252^\circ$
- E.  $288^\circ$