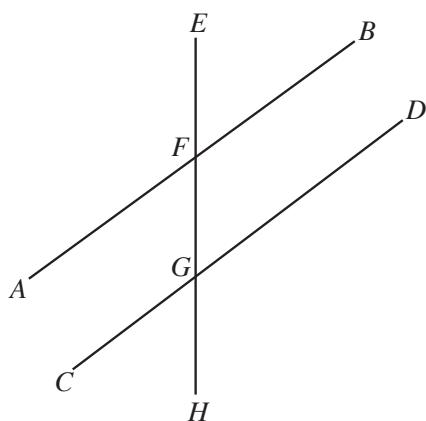


Comprehensive Plane Geometry Drill

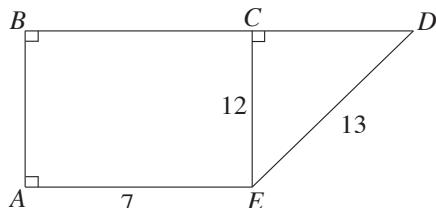
The answers can be found in Part IV.



Note: Figure not drawn to scale.

3. In the figure above, if $\angle EFB$ and $\angle CGF$ are supplementary, then which of the following must be true?

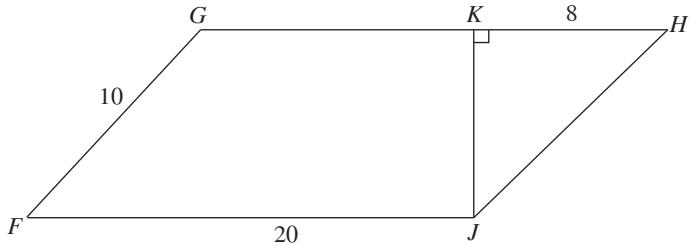
- (A) $\overline{AB} \parallel \overline{CD}$
- (B) $\overline{AB} \perp \overline{CD}$
- (C) $\angle EFB + \angle CGF = 90^\circ$
- (D) $\overline{AB} \parallel \overline{EF}$
- (E) $\overline{EH} \perp \overline{AB}$



Note: Figure not drawn to scale

5. What is the perimeter of quadrilateral $ABDE$ shown above?

- (A) 32
- (B) 39
- (C) 44
- (D) 56
- (E) 114



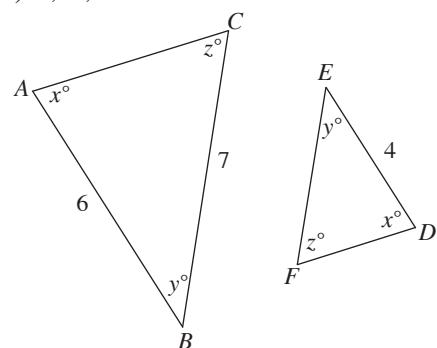
9. If $FG = 10$, $FJ = 20$, and $KH = 8$, then what is the area of parallelogram $FGHIJ$ above?

- (A) 120
- (B) 140
- (C) 160
- (D) 180
- (E) 200

11. Triangle ABC (not shown) is isosceles, and $AB = 7$. Which of the following could be the perimeter of triangle ABC ?

- I. 14
- II. 18
- III. 28

- (A) I only
- (B) II only
- (C) I and II only
- (D) II and III only
- (E) I, II, and III

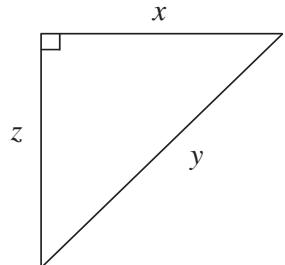


15. In the figure above, what is the length of \overline{EF} ?

- (A) 2.67
- (B) 4
- (C) 4.5
- (D) 4.67
- (E) 5

24. A printmaker wants to triple the area of a square print. If the current print has an area of 50 cm^2 , then what will be the side length of the new, larger print?

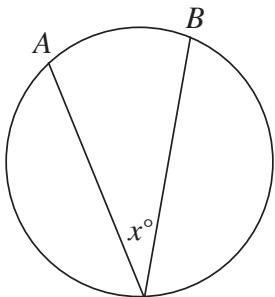
(A) 4.08 cm
 (B) 7.07 cm
 (C) 10.00 cm
 (D) 12.25 cm
 (E) 21.21 cm



Note: Figure not drawn to scale.

32. Given the triangle shown above, which of the following must be true?

(A) $\left(\frac{x+y}{2}\right)\sqrt{2} = z$
 (B) $x^2 + y^2 = z^2$
 (C) $y = x\sqrt{2}$
 (D) $x = z$
 (E) $\sqrt{y^2 - z^2} = x$



36. In the circle above, minor arc AB is $\frac{1}{5}$ the length of the circumference. What is the value of x ?

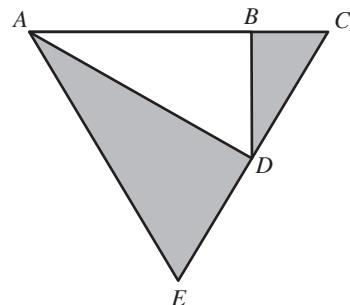
(A) 30
 (B) 36
 (C) 60
 (D) 72
 (E) 144

45. A circle with center O (not shown) has a perimeter of 12π . WX is a diameter of circle O , and YZ is a chord on the circle parallel to WX and with length of 6. What is the area of sector WOY ?

(A) 6.28
 (B) 12.57
 (C) 15.59
 (D) 18.85
 (E) 31.18

48. The diagonal of square $ABCD$ (not shown) is 1.76 m longer than side AB . What is the area of square $ABCD$?

(A) 4.24 m^2
 (B) 6 m^2
 (C) 18 m^2
 (D) 25.46 m^2
 (E) 36 m^2



50. In the figure above, triangle ACE is an equilateral triangle with area 15.59, D is the midpoint of CE , and $BD \perp AC$. What is the area of the shaded region?

(A) 5.85
 (B) 7.79
 (C) 9.74
 (D) 10.13
 (E) 10.53