

Florida Geometry
Chapter 7 - Sunshine State Standards Practice Solutions

A. III; a corollary is a statement that follows immediately after a theorem.

B. IV; for positive numbers a and b , the positive number x such that $\frac{a}{x} = \frac{x}{b}$ is the geometric mean.

C. II; a midsegment connects the midpoints of two sides of a figure.

D. I; the scale is the ratio of a length in a scale drawing to the actual length.

9. B
 The ratio of the distance between two places on a map and the actual distance is always the scale. Therefore, the proportion $\frac{5 \text{ mi}}{d} = \frac{9 \text{ in.}}{1 \text{ in.}}$ is not valid.

11. C
 By the Polygon Angle-Sum Theorem, the sum of the measures of all the angles of an 11-sided regular polygon is $(11 - 2)180 = 1620$. Thus, the sum of the measures of the polygon's first five angles is $5\left(\frac{1620}{11}\right) = 736$.

13. Since the quadrilateral is a parallelogram, opposite angles are \cong . The measure of the supplementary angle to that angle is 45, so
 $(4x + 15) + 45 = 180$
 $x = \frac{120}{4}$
 $x = 30$

15. First determine the dimensions of the actual swimming pool and deck by using the scale of $\frac{1 \text{ in.}}{2 \text{ m}}$; the swimming pool is therefore 4 m by 12 m and the deck is 8 m by 18 m. The area of the deck is the area of the rectangle formed by the deck's dimensions minus the area of the pool. So,
 $A = (8 \times 18) - (4 \times 12)$
 $A = 128 - 48$
 $A = 80 \text{ m}^2$

17. By the Polygon Angle-Sum Theorem, the sum of the measures of a triangle is 180. Let x be the measure of one of the base angles of the isosceles triangle. Therefore,
 $x + x + 112 = 180$
 $x = \frac{68}{2}$
 $x = 34$
 because the base angles are \cong by the Definition of Isosceles Triangles.

19. The diagonals of a rectangle are \cong , so $AC = BD$. Substituting and solving for x gives
 $5(x - 2) = 3(x + 2)$
 $5x - 10 = 3x + 6$
 $2x = 16$
 $x = 8$

22. Let your campsite be point A , the lake be point B , the information center be point C , and the bathhouse be point D . \overline{CD} is the altitude to the hypotenuse of right triangle ABC . Using Corollary 2 to Theorem 7-3, $\frac{AD}{CD} = \frac{CD}{DB}$ and $\frac{AB}{AC} = \frac{AC}{AD}$.

By substitution, $\frac{x}{30} = \frac{30}{y}$ and $xy = 900$ by the Cross Products

Property.

By substitution, $\frac{x + y}{50} = \frac{50}{x}$ and $x^2 + xy = 2500$ by the Cross

Products Property.

Substituting 900 for xy in the second equation,

$$x^2 + 900 = 2500$$

$$x^2 = 1600$$

$$x = 40$$

Substituting 40 for x ,

$$40y = 900$$

$$y = 22.5$$

$$x + y = 40 \text{ yd} + 22.5 \text{ yd} = 62.5 \text{ yd}$$

$$62.5$$