TEST PREP 13 — Properties of Triangles and Four-sided Figures

25
Suggested Time: 30 min

Multiple Choice   (5 × 2 points = 10 points)

Fill in the circle next to the correct answer.

The figures in this section are not drawn to scale.

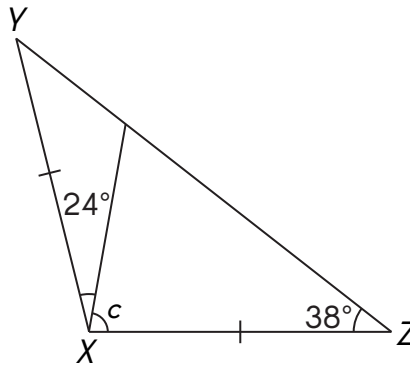**1.**   Find the unknown angle measure in the triangle.
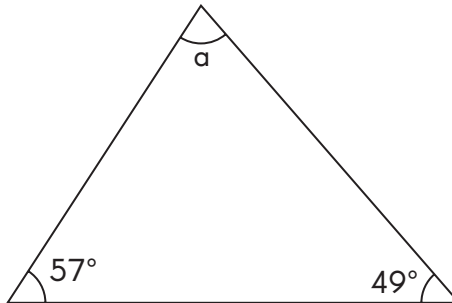
Ⓐ 74°   Ⓑ 106°   Ⓒ 123°   Ⓓ 131°

2.   Find the unknown angle measure in the triangle.
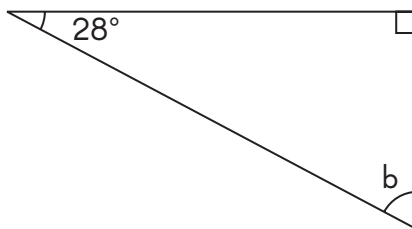
Ⓐ 17°   Ⓑ 62°   Ⓒ 118°   Ⓓ 152°

3.   Triangle *XYZ* is an isosceles triangle. Find the measure of ∠*c*.

(A) 142°   (B) 120°   (C) 104°   (D) 80°

4.   Which of these sets of side lengths of a triangle is possible?

(A) 4 ft, 9 ft, 5 ft   (B) 5 cm, 5 cm, 10 cm

(C) 6 in., 7 in., 8 in.   (D) 3 m, 6 m, 3 m

5.   Triangle *ABC* is a right triangle and *BCD* is an equilateral triangle.
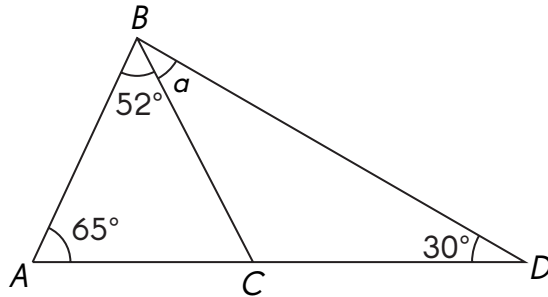   Find the measure of ∠*DAC*.
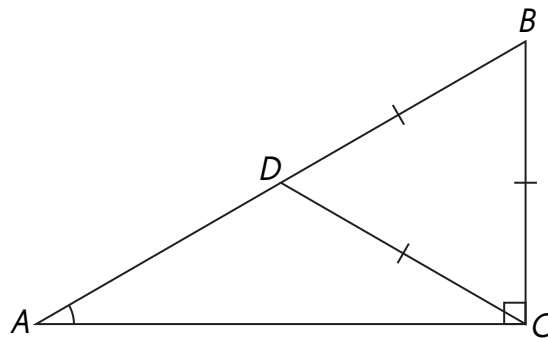
(A) 30°   (B) 60°   (C) 120°   (D) 50°
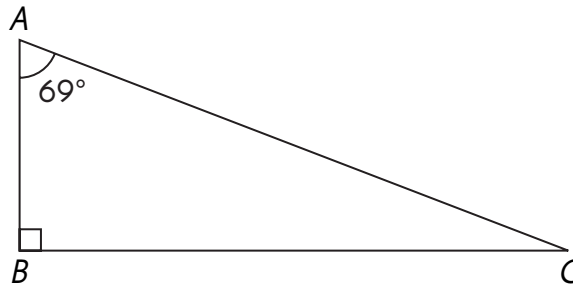
Short Answer   (5 × 2 points = 10 points)

Write your answer in the space provided.

The figures in this section are not drawn to scale.

6.   *ABC* and *BCD* are triangles. Find the unknown angle measure.

7.   Triangle *ABC* is a right triangle.
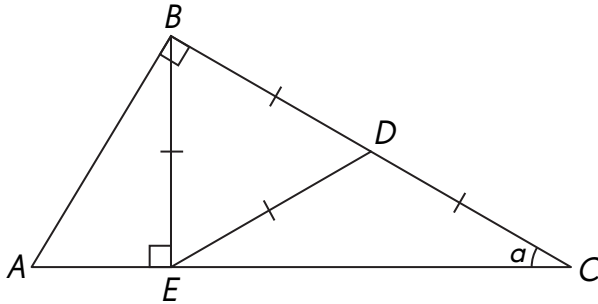

a.   Complete with $<$, $>$, or $=$.

$m\angle BAC \bigcirc m\angle ACB$

b.   What is the difference in the angle measures of $\angle BAC$ and $\angle ACB$?
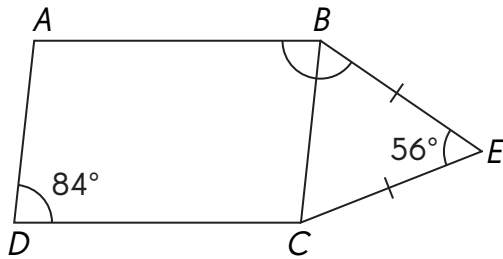
8. Triangle *ABC* is a right triangle. Triangle *BDE* is an equilateral triangle and Triangle *CDE* is an isosceles triangle. Find the measure of ∠*a*.
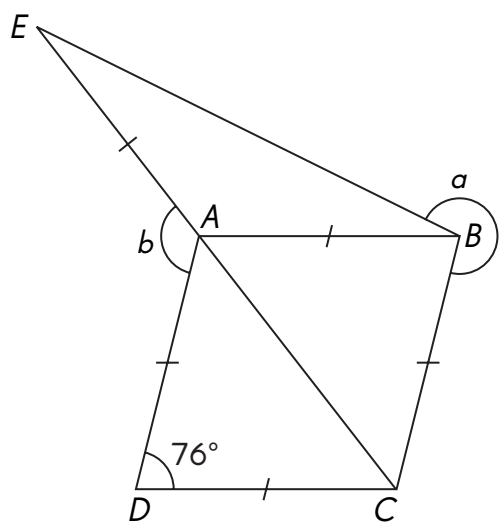

9. *ABCD* is a parallelogram where $\overline{AB} /\!/ \overline{DC}$. Triangle *BCE* is an isosceles triangle. Find the measure of ∠*ABE*.

10. *ABCD* is a rhombus. Triangle *ABE* is an isosceles triangle. $\overline{CE}$ is a line segment. Find the measures of $\angle a$ and $\angle b$.
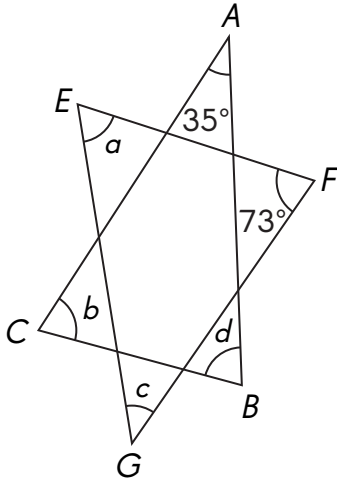
Extended Response   (Question 11: 2 points, Question 12: 3 points)

Solve. Show your work.

11. *ABC* and *EFG* are triangles. Find the sum of the measures of $\angle a$, $\angle b$, $\angle c$, and $\angle d$.

12. *ABCE* is a trapezoid where $\overline{AB} \parallel \overline{EC}$. *ABDE* is a rhombus. Find the measure of $\angle EBC$.