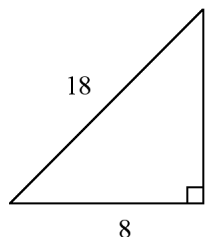## Geo, Chap 8 Practice Test, EV Ver 1

Short Answer

> **Find the length of the missing side. Leave your answer in simplest radical form.**

1. (8-1)

Not drawn to scale

2. (8-1) A grid shows the positions of a subway stop and your house. The subway stop is located at (6, 0) and your house is located at (−7, 1). What is the distance, to the nearest unit, between your house and the subway stop?

3. (8-1) A triangle has side lengths of 10 cm, 24 cm, and 26 cm. Classify it as acute, obtuse, or right.

4. (8-2) Find the value of *x* and *y* rounded to the nearest tenth.
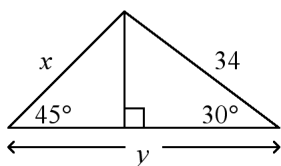
5. (8-2)   A piece of art is in the shape of an equilateral triangle with sides of 14 in. Find the area of the piece of art. Round your answer to the nearest tenth.

6. (8-2)   A conveyor belt carries supplies from the first floor to the second floor, which is 22 feet higher. The belt makes a 60° angle with the ground.
    a. How far do the supplies travel from one end of the conveyor belt to the other? Round your answer to the nearest foot.
    b. If the belt moves at 75 ft/min, how long, to the nearest tenth of a minute, does it take the supplies to move to the second floor?
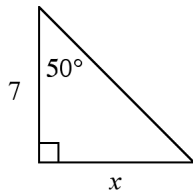
Find the value of x. Round your answer to the nearest tenth.

7. (8-3)

30°

x

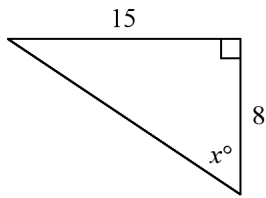7
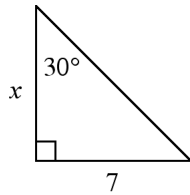
Not drawn to scale

8. (8-3)

50°

7

x

Not drawn to scale

Find the value of x to the nearest degree.

9. (8-3)

15

8
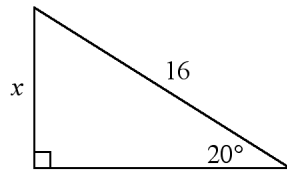
$x°$

Not drawn to scale

Find the value of x. Round to the nearest tenth.
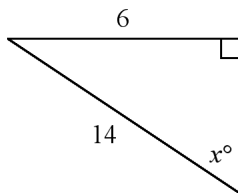
10. (8-4)

x

16

20°

Not drawn to scale

Find the value of x. Round to the nearest degree.

11. (8-4)

6

14

$x°$

Not drawn to scale

12. (8-4)   Viola drives 160 meters up a hill that makes an angle of 6° with the horizontal. To the nearest tenth of a meter, what horizontal distance has she covered?

Find the value of *x*. Round the length to the nearest tenth.

13. (8-5)

30°

x

100 m
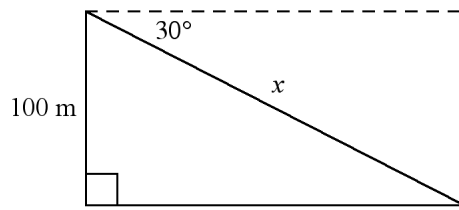
Not drawn to scale

14. (8-5)

30°

x

11 yd
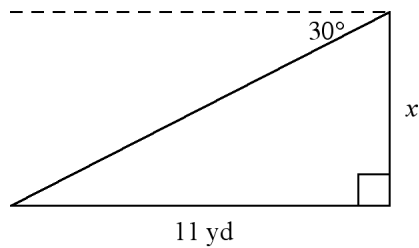
Not drawn to scale

15. (8-5)   To approach the runway, a small plane must begin a 9° descent starting from a height of 1036 feet above the ground. To the nearest tenth of a mile, how many miles from the runway is the airplane at the start of this approach?

9°

x

1036 ft
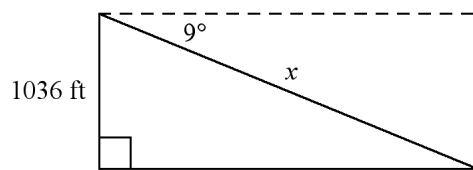
Not drawn to scale

16. (8-6)   A glider lands 18 miles west and 8 miles south from where it took off. The result of the trip can be described by the vector $\langle -18, -8 \rangle$. Use distance (for magnitude) and direction to describe this vector a second way.
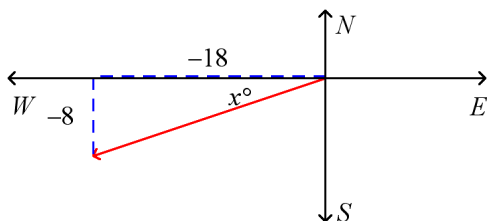
Write the sum of the two vectors as an ordered pair.

17. (8-6) $\langle 0, 5 \rangle$ and $\langle -5, -4 \rangle$

18. (8-6)   Miguel is driving his motorboat across a river. The speed of the boat in still water is 13 mi/h. The river flows directly south at 3 mi/h. If Miguel heads directly west, what are the boat's resultant speed and direction? (Not drawn to scale)
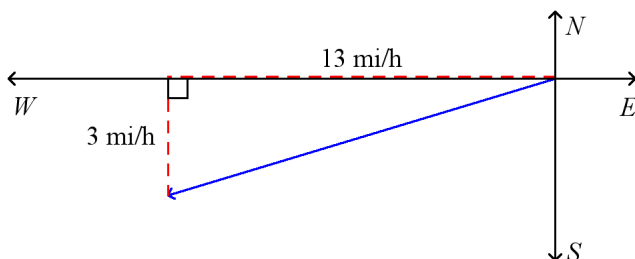
Geo, Chap 8 Practice Test, EV Ver 1
Answer Section

SHORT ANSWER

1. ANS:
   $2\sqrt{65}$ cm

   PTS: 1   DIF: L2   REF: 8-1 The Pythagorean Theorem and Its Converse
   OBJ: 8-1.1 The Pythagorean Theorem STA: CA GEOM 15.0
   TOP: 8-1 Example 2   KEY: Pythagorean Theorem | leg | hypotenuse
2. ANS:
   13

   PTS: 1   DIF: L3   REF: 8-1 The Pythagorean Theorem and Its Converse
   OBJ: 8-1.1 The Pythagorean Theorem STA: CA GEOM 15.0
   TOP: 8-1 Example 3
   KEY: Pythagorean Theorem | leg | hypotenuse | word problem | problem solving
3. ANS:
   right

   PTS: 1   DIF: L2   REF: 8-1 The Pythagorean Theorem and Its Converse
   OBJ: 8-1.2 The Converse of the Pythagorean Theorem   STA: CA GEOM 15.0
   TOP: 8-1 Example 5   KEY: right triangle | obtuse triangle | acute triangle
4. ANS:
   $x = 24.0$, $y = 46.4$

   PTS: 1   DIF: L3   REF: 8-2 Special Right Triangles
   OBJ: 8-2.2 Using 30°-60°-90° Triangles   STA: CA GEOM 15.0| CA GEOM 20.0
   TOP: 8-2 Example 4   KEY: special right triangles | leg | hypotenuse
5. ANS:
   84.9 in.²

   PTS: 1   DIF: L2   REF: 8-2 Special Right Triangles
   OBJ: 8-2.2 Using 30°-60°-90° Triangles   STA: CA GEOM 15.0| CA GEOM 20.0
   TOP: 8-2 Example 5   KEY: area of a triangle | word problem | problem solving
6. ANS:
   25 ft; 0.3 min

   PTS: 1   DIF: L3   REF: 8-2 Special Right Triangles
   OBJ: 8-2.2 Using 30°-60°-90° Triangles   STA: CA GEOM 15.0| CA GEOM 20.0
   TOP: 8-2 Example 5
   KEY: special right triangles | multi-part question | word problem | problem solving

7. ANS:
   12.1

   PTS: 1　　　　DIF: L2　　　REF: 8-3 The Tangent Ratio
   OBJ: 8-3.1 Using Tangents in Triangles　　　　STA: CA GEOM 18.0| CA GEOM 19.0
   TOP: 8-3 Example 2　　　　KEY: side length using tangent | tangent | tangent ratio
8. ANS:
   8.3

   PTS: 1　　　　DIF: L2　　　REF: 8-3 The Tangent Ratio
   OBJ: 8-3.1 Using Tangents in Triangles　　　　STA: CA GEOM 18.0| CA GEOM 19.0
   TOP: 8-3 Example 2　　　　KEY: side length using tangent | tangent | tangent ratio
9. ANS:
   62

   PTS: 1　　　　DIF: L2　　　REF: 8-3 The Tangent Ratio
   OBJ: 8-3.1 Using Tangents in Triangles　　　　STA: CA GEOM 18.0| CA GEOM 19.0
   TOP: 8-3 Example 3
   KEY: inverse of tangent | tangent | tangent ratio | angle measure using tangent
10. ANS:
    5.5

    PTS: 1　　　　DIF: L2　　　REF: 8-4 Sine and Cosine Ratios
    OBJ: 8-4.1 Using Sine and Cosine in Triangles　　　　STA: CA GEOM 18.0| CA GEOM 19.0
    TOP: 8-4 Example 2　　　　KEY: sine | side length using since and cosine | sine ratio
11. ANS:
    25

    PTS: 1　　　　DIF: L2　　　REF: 8-4 Sine and Cosine Ratios
    OBJ: 8-4.1 Using Sine and Cosine in Triangles　　　　STA: CA GEOM 18.0| CA GEOM 19.0
    TOP: 8-4 Example 3
    KEY: inverse of cosine and sine | angle measure using sine and cosine | sine
12. ANS:
    159.1 m

    PTS: 1　　　　DIF: L3　　　REF: 8-4 Sine and Cosine Ratios
    OBJ: 8-4.1 Using Sine and Cosine in Triangles　　　STA: CA GEOM 18.0| CA GEOM 19.0
    TOP: 8-4 Example 2
    KEY: cosine | word problem | side length using since and cosine | problem solving | cosine ratio
13. ANS:
    200 m

    PTS: 1　　　　DIF: L2　　　REF: 8-5 Angles of Elevation and Depression
    OBJ: 8-5.1 Using Angles of Elevation and Depression　　STA: CA GEOM 18.0| CA GEOM 19.0
    TOP: 8-5 Example 3
    KEY: sine | side length using since and cosine | sine ratio | angles of elevation and depression

14. ANS:
    6.4 yd

    PTS: 1   DIF: L2   REF: 8-5 Angles of Elevation and Depression
    OBJ: 8-5.1 Using Angles of Elevation and Depression   STA: CA GEOM 18.0| CA GEOM 19.0
    TOP: 8-5 Example 3
    KEY: tangent | side length using tangent | tangent ratio | angles of elevation and depression

15. ANS:
    1.3 mi

    PTS: 1   DIF: L2   REF: 8-5 Angles of Elevation and Depression
    OBJ: 8-5.1 Using Angles of Elevation and Depression   STA: CA GEOM 18.0| CA GEOM 19.0
    TOP: 8-5 Example 3
    KEY: side length using since and cosine | word problem | problem solving | sine | angles of elevation and depression | sine ratio

16. ANS:
    20 miles at 24° south of west

    PTS: 1   DIF: L2   REF: 8-6 Vectors   OBJ: 8-6.1 Describing Vectors
    STA: CA GEOM 15.0| CA GEOM 19.0   TOP: 8-6 Example 3
    KEY: magnitude of a vector | word problem | vector coordinates | initial point of a vector | terminal point of a vector | vector | problem solving

17. ANS:
    $\langle -5, 1 \rangle$

    PTS: 1   DIF: L2   REF: 8-6 Vectors   OBJ: 8-6.2 Adding Vectors
    STA: CA GEOM 15.0| CA GEOM 19.0   TOP: 8-6 Example 4
    KEY: adding vectors | vector coordinates | vector

18. ANS:
    13.3 mi/h; 13° south of west

    PTS: 1   DIF: L2   REF: 8-6 Vectors   OBJ: 8-6.2 Adding Vectors
    STA: CA GEOM 15.0| CA GEOM 19.0   TOP: 8-6 Example 5
    KEY: magnitude of a vector | problem solving | vector | word problem