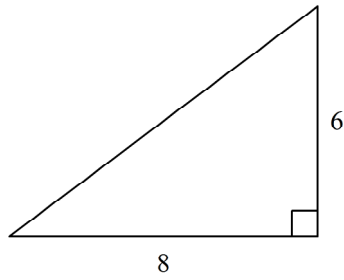


Geometry - Chapter 8 SAMPLE

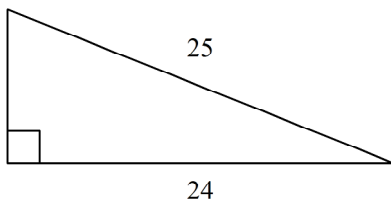
Short Answer

Find the length of the missing side. The triangle is not drawn to scale.

1.

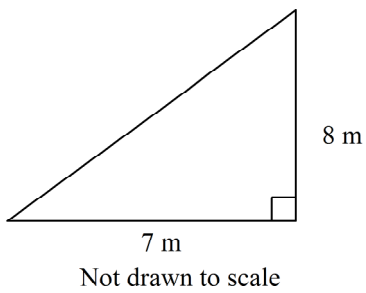


2.

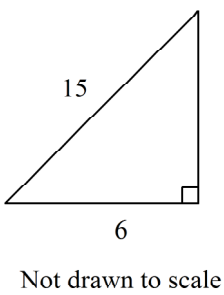


Find the length of the missing side. Leave your answer in simplest radical form.

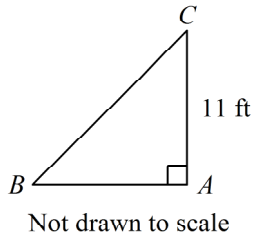
3.



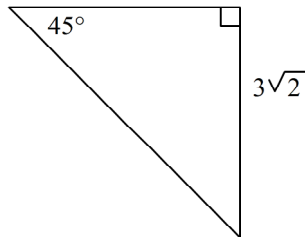
4.



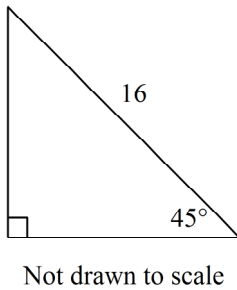
5. A triangle has sides of lengths 12, 14, and 19. Is it a right triangle? Explain.
6. A triangle has side lengths of 8 cm, 15 cm, and 16 cm. Classify it as acute, obtuse, or right.
7. In triangle ABC , $\angle A$ is a right angle and $m\angle B = 45^\circ$. Find BC . If your answer is not an integer, leave it in simplest radical form.



8. Find the length of the hypotenuse.

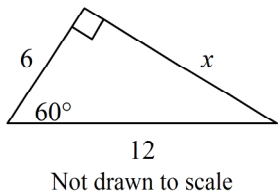


9. Find the length of the leg. If your answer is not an integer, leave it in simplest radical form.

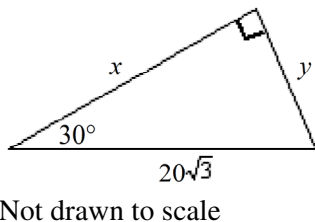


Find the value of the variable(s). If your answer is not an integer, leave it in simplest radical form.

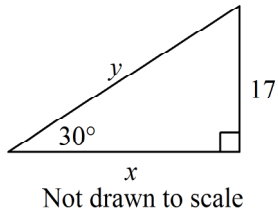
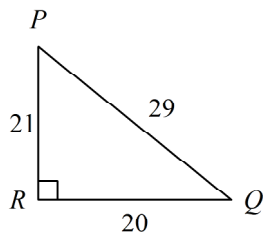
10.



11.

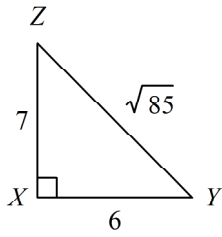


12.

13. Write the tangent ratios for $\angle P$ and $\angle Q$.

Not drawn to scale

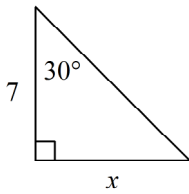
14. Write the tangent ratios for $\angle Y$ and $\angle Z$.



Not drawn to scale

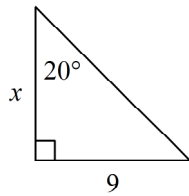
Find the value of x . Round your answer to the nearest tenth.

- 15.



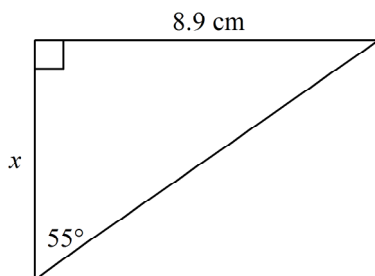
Not drawn to scale

- 16.

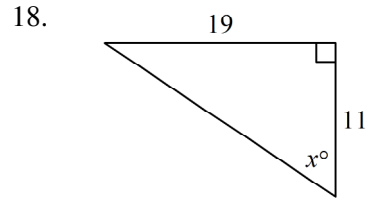


Not drawn to scale

- 17.

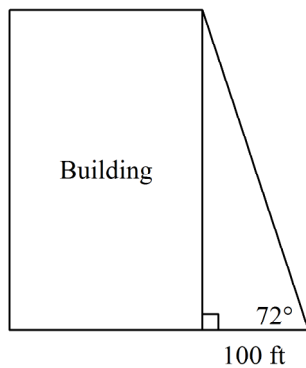


Find the value of x to the nearest degree.



Not drawn to scale

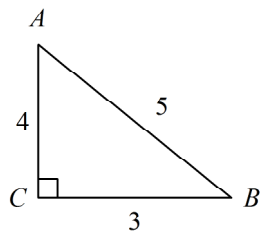
19. The students in Mr. Collin's class used a surveyor's measuring device to find the angle from their location to the top of a building. They also measured their distance from the bottom of the building. The diagram shows the angle measure and the distance. To the nearest foot, find the height of the building.



20. Find the missing value to the nearest tenth.

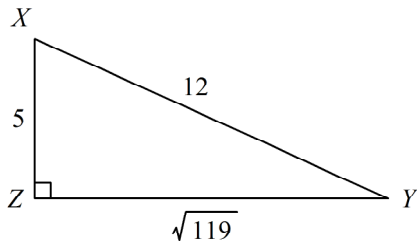
$$\tan \blacksquare = 45$$

21. Write the ratios for $\sin A$ and $\cos A$.



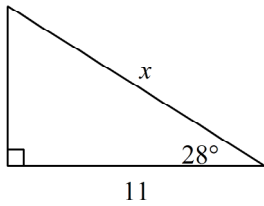
Not drawn to scale

22. Write the ratios for
- $\sin X$
- and
- $\cos X$
- .



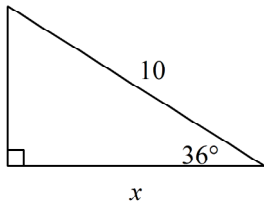
Find the value of x . Round to the nearest tenth.

- 23.



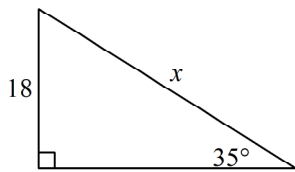
Not drawn to scale

- 24.



Not drawn to scale

- 25.

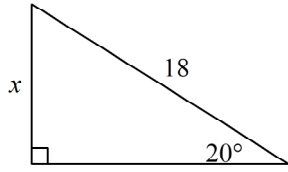


Not drawn to scale

Name: _____

ID: A

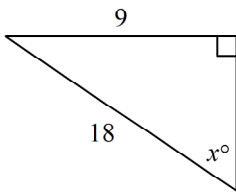
26.



Not drawn to scale

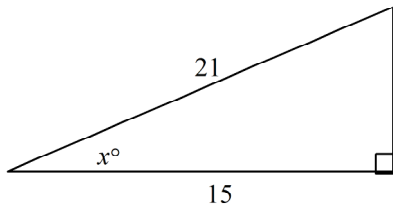
Find the value of x . Round to the nearest degree.

27.



Not drawn to scale

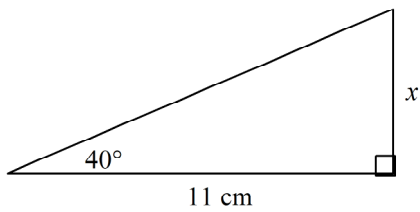
28.



Not drawn to scale

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

29.

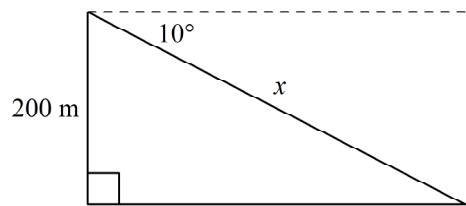


Not drawn to scale

Name: _____

ID: A

30.



Not drawn to scale

Geometry - Chapter 8 SAMPLE Answer Section

SHORT ANSWER

1. ANS:
10
- 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 1 KEY: Pythagorean Theorem | leg | hypotenuse
2. ANS:
7
- 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 1 KEY: Pythagorean Theorem | leg | hypotenuse
3. ANS:
 $\sqrt{113}$ m
- 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
4. ANS:
 $3\sqrt{21}$ 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
5. ANS:
no; $12^2 + 14^2 \neq 19^2$
- 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 4 KEY: Pythagorean Theorem
6. ANS:
acute
- 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

7. ANS:

$$11\sqrt{2} \text{ ft}$$

PTS: 1

DIF: L3

REF: 8-2 Special Right Triangles

OBJ: 8-2.1 45°-45°-90° Triangles

STA: CA GEOM 15.0| CA GEOM 20.0

TOP: 8-2 Example 1

KEY: special right triangles

8. ANS:

6

PTS: 1

DIF: L2

REF: 8-2 Special Right Triangles

OBJ: 8-2.1 45°-45°-90° Triangles

STA: CA GEOM 15.0| CA GEOM 20.0

TOP: 8-2 Example 1

KEY: special right triangles | hypotenuse

9. ANS:

$$8\sqrt{2}$$

PTS: 1

DIF: L2

REF: 8-2 Special Right Triangles

OBJ: 8-2.1 45°-45°-90° Triangles

STA: CA GEOM 15.0| CA GEOM 20.0

TOP: 8-2 Example 2

KEY: special right triangles | hypotenuse | leg

10. ANS:

$$6\sqrt{3}$$

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 4

KEY: special right triangles | leg | hypotenuse

11. ANS:

$$x = 30, y = 10\sqrt{3}$$

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 4

KEY: special right triangles | leg | hypotenuse

12. ANS:

$$x = 17\sqrt{3}, y = 34$$

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 4

KEY: special right triangles | leg | hypotenuse

13. ANS:

$$\tan P = \frac{20}{21}; \tan Q = \frac{21}{20}$$

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 1

KEY: tangent ratio | tangent | leg opposite angle | leg adjacent to angle

14. ANS:

$$\tan Y = \frac{7}{6}; \tan Z = \frac{6}{7}$$

PTS: 1 DIF: L3 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 1
 KEY: leg adjacent to angle | leg opposite angle | tangent | tangent ratio

15. ANS:

4

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

16. ANS:

24.7

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

17. ANS:

6.2 cm

PTS: 1 DIF: L3 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

18. ANS:

60

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

19. ANS:

308 ft

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: problem solving | word problem | tangent | side length using tangent | tangent ratio

20. ANS:

88.7°

PTS: 1 DIF: L3 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: angle measure using tangent

21. ANS:

$$\sin A = \frac{3}{5}, \cos A = \frac{4}{5}$$

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 1 KEY: sine | cosine | sine ratio | cosine ratio

22. ANS:

$$\sin X = \frac{\sqrt{119}}{12}, \cos X = \frac{5}{12}$$

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 1 KEY: cosine | sine | sine ratio | cosine ratio

23. ANS:

12.5

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: cosine | side length using sine and cosine | cosine ratio

24. ANS:

8.1

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: cosine | side length using sine and cosine | cosine ratio

25. ANS:

31.4

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 sine and cosine | sine ratio

26. ANS:

6.2

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 sine and cosine | sine ratio

27. ANS:

30

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

28. ANS:
44

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 | cosine

29. ANS:
9.2 cm

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 2 KEY: tangent | side length using tangent | tangent ratio

30. ANS:
1151.8 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 sine and cosine | sine ratio | angles of elevation and depression