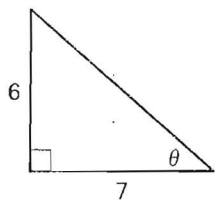
Geometry Trigonometry Review
Right Triangle Trigonometry A

Name _____
Date _____
Period _____

Evaluate the six trigonometric functions of the angle θ.

1.



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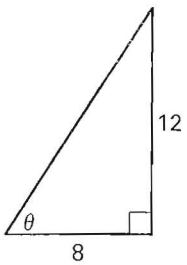

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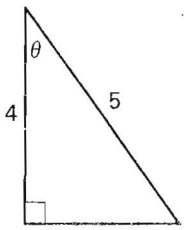

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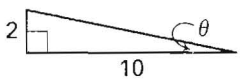

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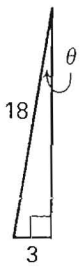

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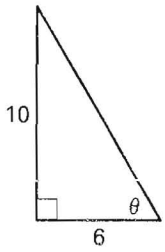
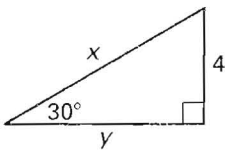


Find the missing side lengths x and y.

7.



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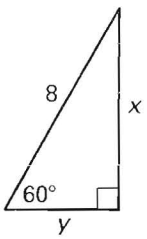

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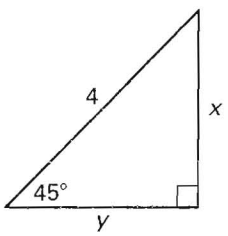
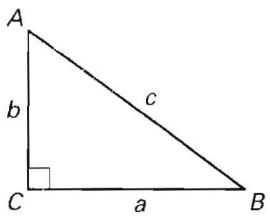


Use a calculator to evaluate the trigonometric function. Round the result to four decimal places.

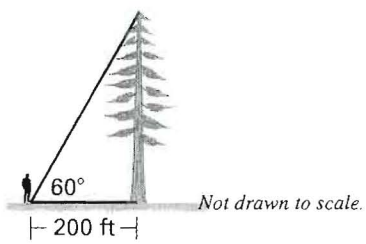
10. sin 15°
11. cos 47°
12. tan 65°
13. csc 18°
14. sec 25°
15. cot 62°
16. sin 80°
17. cos 10°

Solve $\triangle ABC$ using the diagram and the given measurements.



18. $B = 12°, a = 4$
19. $A = 74°, c = 20$
20. $A = 50°, b = 8$
21. $B = 38°, c = 7$
22. $A = 72°, b = 18$
23. $B = 22°, a = 5$

24. ***Redwood Trees*** You are standing 200 feet from the base of a redwood tree. You estimate the angle of elevation to the top of the tree is 60°. What is the approximate height of the tree?

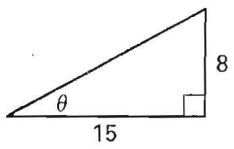


Geometry Trigonometry Review
Right Triangle Trigonometry B

Name _____
Date _____
Period _____

Evaluate the six trigonometric functions of the angle θ.

1.



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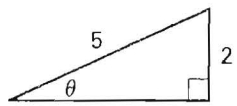

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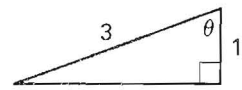
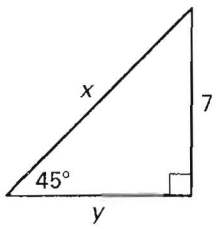


Find the missing side lengths x and y.

4.



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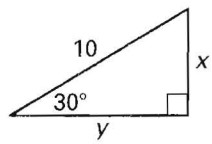

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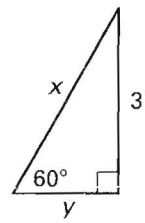
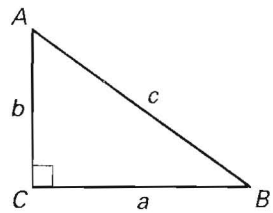


Use a calculator to evaluate the trigonometric function. Round the result to four decimal places.

7. cos 27°
8. tan 5°
9. sin 48°
10. cot 81°
11. csc 23°
12. sec 66°
13. cot 13°
14. sin 32°

Solve $\triangle ABC$ using the diagram and the given measurements.

15. $A = 46°, b = 8$
16. $B = 24°, c = 13$
17. $B = 18°, c = 10$
18. $A = 55°, a = 20$
19. $B = 70°, a = 6$
20. $A = 7°, b = 18$



21. ***Flagpole*** You are standing 25 feet from the base of a flagpole. The angle of elevation to the top of the flagpole is 30°. What is the height of the flagpole to the nearest tenth?

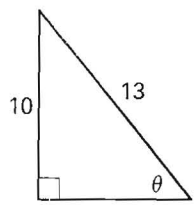
22. ***Mount Fuji*** Mt. Fuji in Japan is approximately 12,400 feet high. Standing several miles away, you estimate the angle of elevation to the top of the mountain is 30°. Approximately how far way are you from the base of the mountain?

Geometry Trigonometry Review
Right Triangle Trigonometry C

Name _____
Date _____
Period _____

Evaluate the six trigonometric functions of the angle θ.

1.



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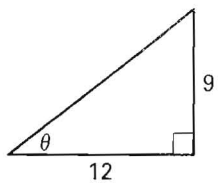

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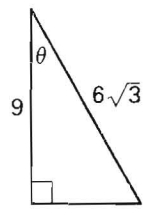
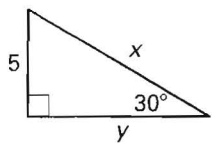


Find the missing side lengths x and y.

4.



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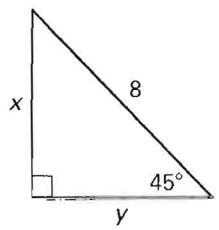

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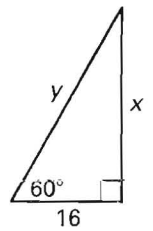
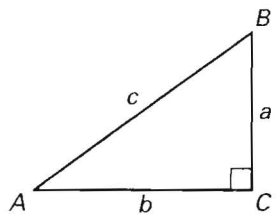


Use a calculator to evaluate the trigonometric function. Round the result to four decimal places.

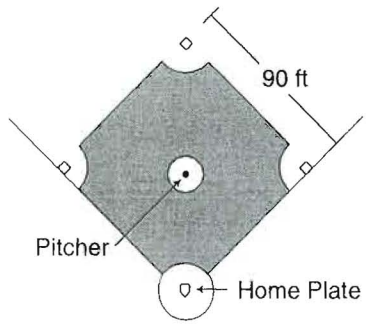
7. tan 10°
8. csc 40°
9. sin 51°
10. cos 89°
11. sec 29°
12. cos 3°
13. cot 38°
14. sec 67°

Solve $\triangle ABC$ using the diagram and the given measurements.

15. $A = 14°, a = 6$
16. $A = 57°, b = 12$
17. $B = 32°, c = 20.4$
18. $A = 64°, c = 12.8$
19. $B = 73°, a = 17$
20. $B = 10°, b = 14$

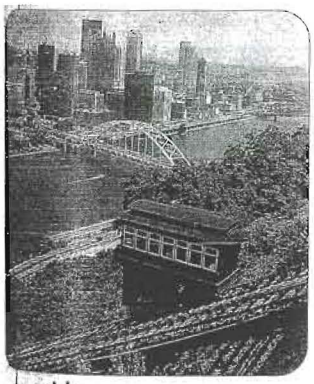


21. ***Baseball Diamond*** A baseball diamond is laid out so that the bases are 90 feet apart and at right angles as shown at the right. The distance from home plate to the pitcher's mound is 60 feet 6 inches. Find the distance from the pitcher's mound to second base. (*Hint:* The pitcher's mound is not exactly halfway between home plate and second base.)



Geometry Trigonometry Review
Right Triangle Trigonometry D

Name _____
Date _____
Period _____



REAL LIFE DUQUESNE INCLINE Built in Pittsburgh in 1877, the Duquesne Incline transports people up and down the side of a mountain in cable cars. In 1877 the cost of a one-way trip was $.05. Today the cost is $1.

DUQUESNE INCLINE **In Exercises 1 and 2, use the following information.** The track of the Duquesne Incline is about 800 feet long and the angle of elevation is 30°. The average speed of the cable cars is about 320 feet per minute.

1. How high does the Duquesne Incline rise?

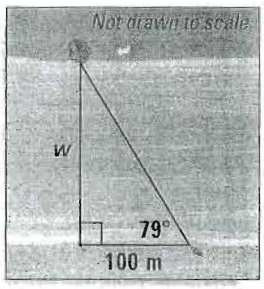
2. What is the vertical speed of the cable cars (in feet per minute)?

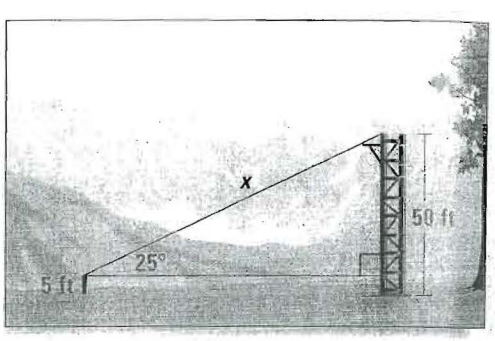
3. **SKI SLOPE** A ski slope at a mountain has an angle of elevation of 25.2°. The vertical height of the slope is 1808 feet. How long is the ski slope?

4. **BOARDING A SHIP** A gangplank is a narrow ramp used for boarding or leaving a ship. The maximum safe angle of elevation for a gangplank is 20°. Suppose a gangplank is 10 feet long. What is the closest a ship can come to the dock for the gangplank to be used?

5. **JIN MAO BUILDING** You are standing 75 meters from the base of the Jin Mao Building in Shanghai, China. You estimate that the angle of elevation to the top of the building is 80°. What is the approximate height of the building? Suppose one of your friends is at the top of the building. What is the distance between you and your friend?

6. **MEASURING RIVER WIDTH** To measure the width of a river you plant a stake on one side of the river, directly across from a boulder. You then walk 100 meters to the right of the stake and measure a 79° angle between the stake and the boulder. What is the width w of the river?



7. **MOUNT COOK** You are climbing Mount Cook in New Zealand. You are below the mountain's peak at an altitude of 8580 feet. Using surveying instruments, you measure the angle of elevation to the peak to be 30.5°. The distance (along the face of the mountain) between you and the peak is 7426 feet. What is the altitude of the peak?

8. **ROPES COURSE** You are designing a zip-line for a ropes course at a summer camp. A zip-line is a cable to which people can attach their safety harnesses and slide down to the ground. You want to attach one end of the cable to a pole 50 feet high and the other end to a pole 5 feet high. The maximum safe angle of elevation for the zip-line is 25°. Calculate the minimum length x of cable needed.