

Are You Ready For The Unit 6 Test?

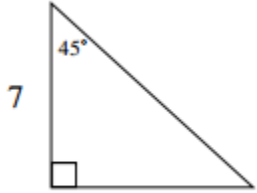
Math II Honors

You should be able to:

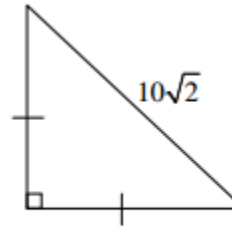
- Know and use the special right triangle ratios to solve for a missing side in radical form.
- Know and use trig functions (SOH-CAH-TOA) to solve for a missing side or angle measure in a right triangle.
- Use trig functions to solve word problems for angles of elevation and depression.
- Use the Laws of Sines and Cosines to solve for a missing angle or side length in an oblique triangle.
- Find the area of oblique triangles.
- Recognize graphs of sine and cosine
 - Identify period, amplitude, relative maximum and minimum for each function graph.

Use the properties of special right triangles to solve for each missing side. Leave all answers in simplest radical form.

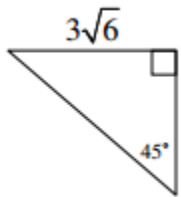
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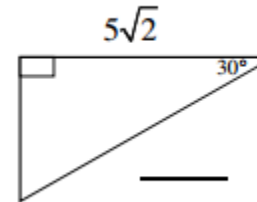
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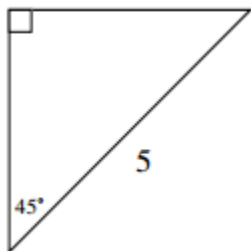
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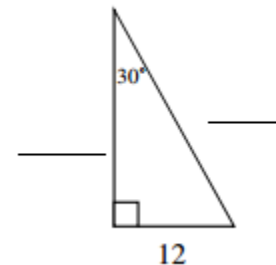
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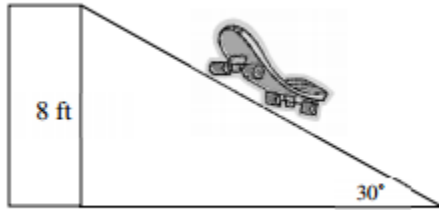
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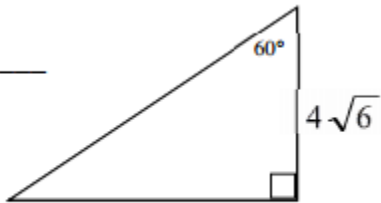
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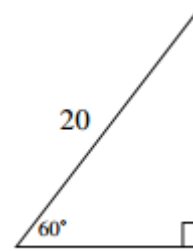
7. A skate board ramp must be set up to rise from the ground at 30° . If the height from the ground to the platform is 8 feet, how far away from the platform must the ramp be set?



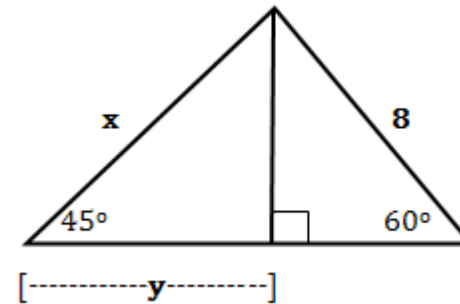
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9.

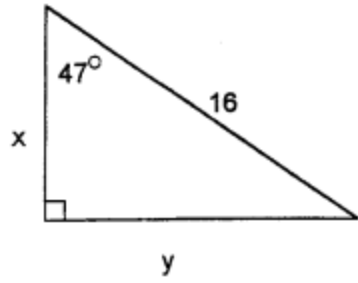


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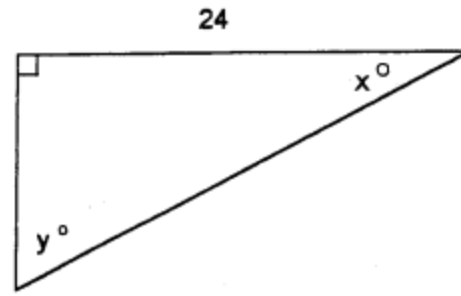


Solve for the missing variables.

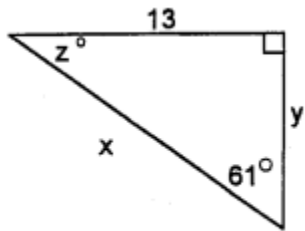
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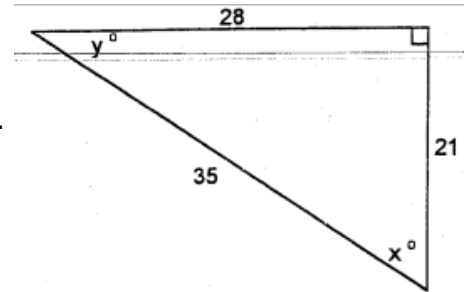
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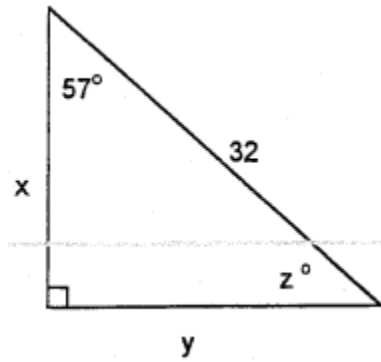
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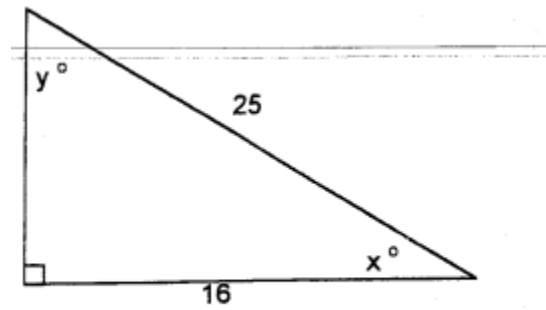
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13.



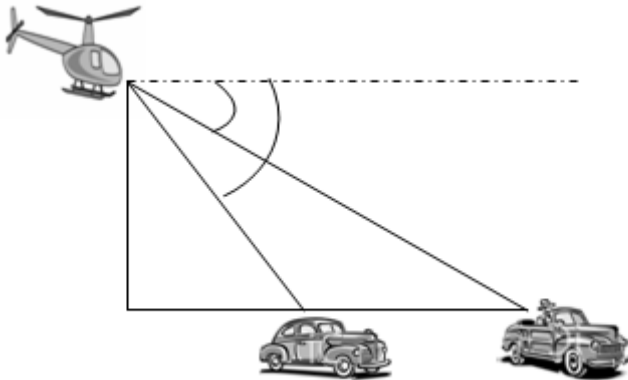
16.



Solve each angle of elevation/depression word problem.

17. A ladder is positioned so that it reaches a window 15 feet on the side of a building. If the foot ladder makes a 32° angle with the ground how long is the ladder? Round answer to the nearest tenth.

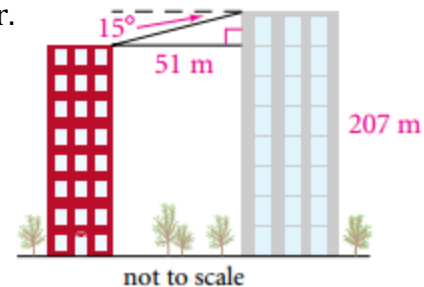
18. A traffic helicopter pilot 120 meters above the road spotted two antique cars. The angles of depression were 10.6° and 14.2° . How far apart were the two antique cars? Round answer to the nearest hundredth.



19. The angle of depression from a hot air balloon to its landing target is 12° . If the balloon is 175 ft high, find its distance measured along the ground from the target.

20. The angle of elevation from the bottom of the lift to the top of Snow Bowl is 33° . If a skier rides 1,000 feet on this lift to the top, what is the vertical distance between the bottom of the lift and the top?

21. Two office buildings are 51 m apart. The height of the taller building is 207 m. The angle of depression from the top of the taller building to the top of the shorter building is 15° . Find the height of the shorter building to the nearest meter.



22. A campsite is 9.41 miles from a point directly below the mountain top. If the angle of elevation is 12° from the camp to the top of the mountain, how high is the mountain?

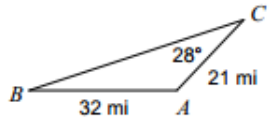
23. Joanna knows that when she stands 134 ft from the base of a flag pole, the angle of elevation to the top of the flag pole is 27° . If her eyes are 5.4 ft from the ground, find the height of the flag pole.

24. A school 61 feet tall sits 120 feet from a road. Find the angle of depression to the road.

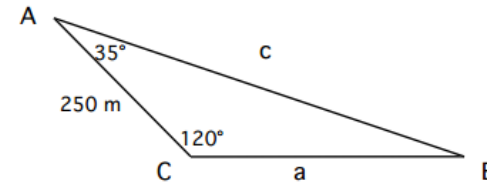
25. A 6 foot tall person stands on top of a building 40 feet tall. The person looks down at a flower on the ground. The distance from the person to the flower is 85 feet. Find the angle of depression from the person to the flower.

For each triangle below, state whether you would use the Law of Sines or the Law of Cosines to solve. Then solve.

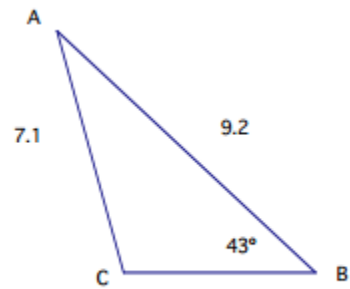
26.) Find $m\angle B$



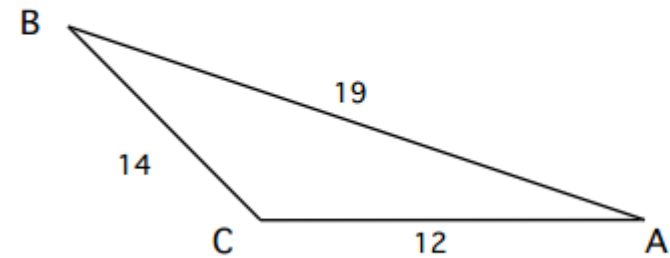
28. Find a



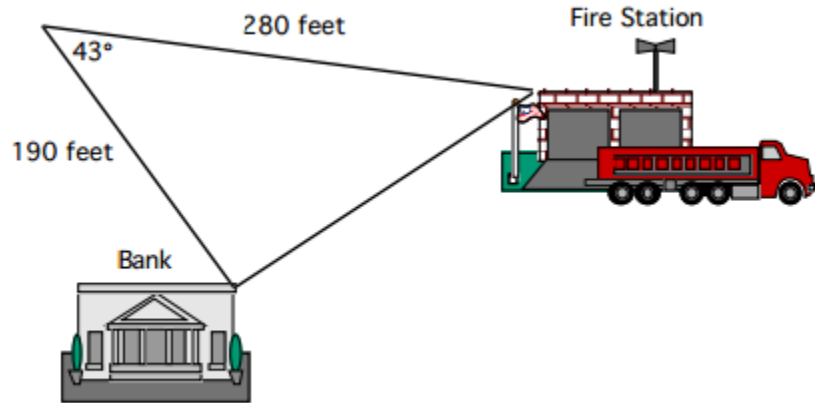
27. Find $m\angle A$



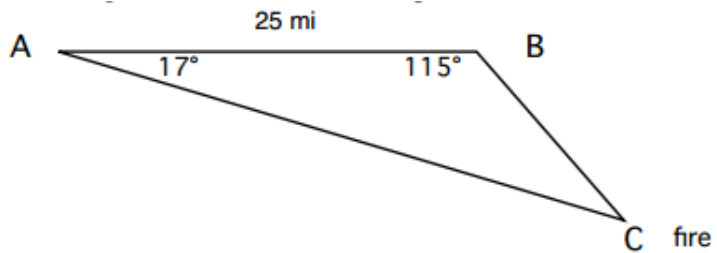
29. In $\triangle ABC$, $a = 14$, $b = 12$, and $c = 19$, find $\angle A$ the nearest degree.



30. Find the distance between the fire station and the bank to the nearest foot.



31. Two radar stations are 25 miles apart. Radar station A sees the fire at an angle of 17° . Radar station B sees the fire at an angle of 115° . The fire is at point C. How far is each radar station from the fire?



Find the area of the following oblique triangles.

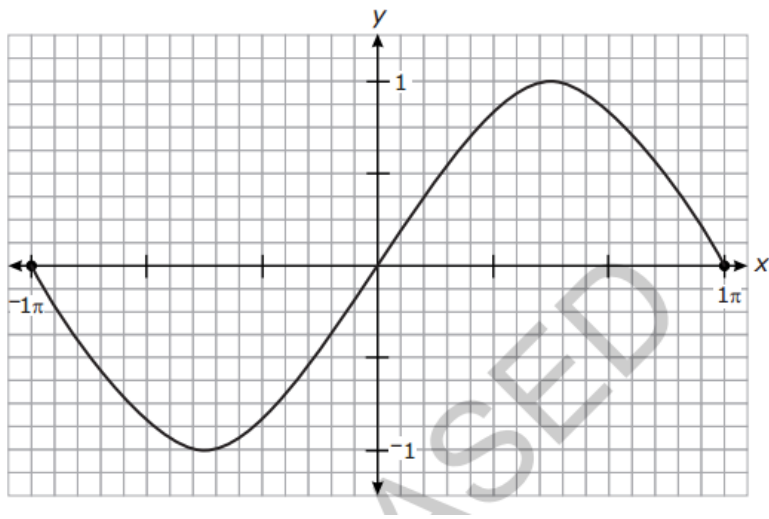
32. $C = 58^\circ$, $a = 12$, $b = 15$

34. $B = 135.2^\circ$, $a = 46.12$ ft, $c = 36.74$ ft

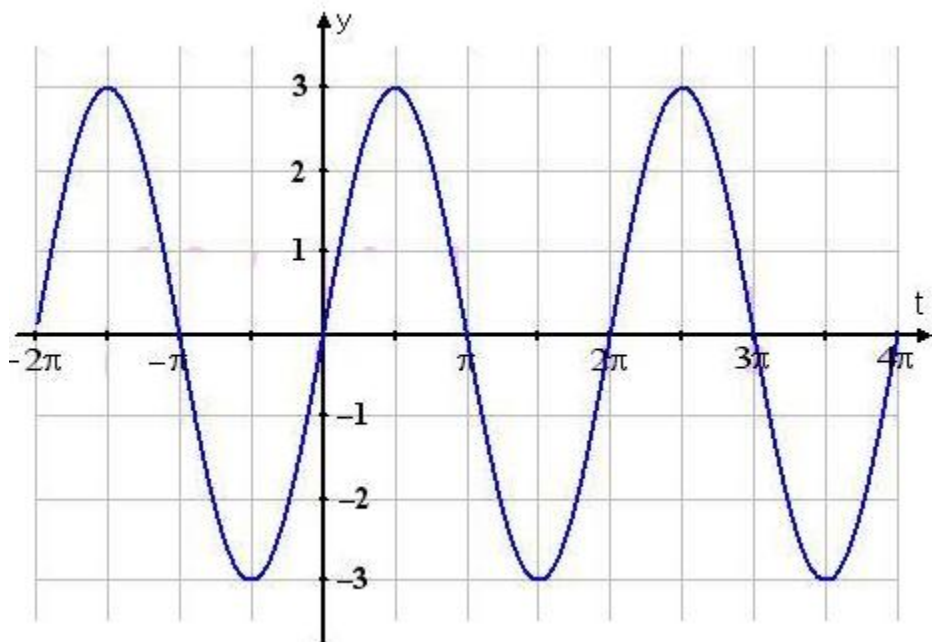
33. $B = 42^\circ$, $a = 7.2$ ft, $c = 3.4$ ft

35. $C = 75.16^\circ$, $a = 1.5$ m, $b = 2.1$ m

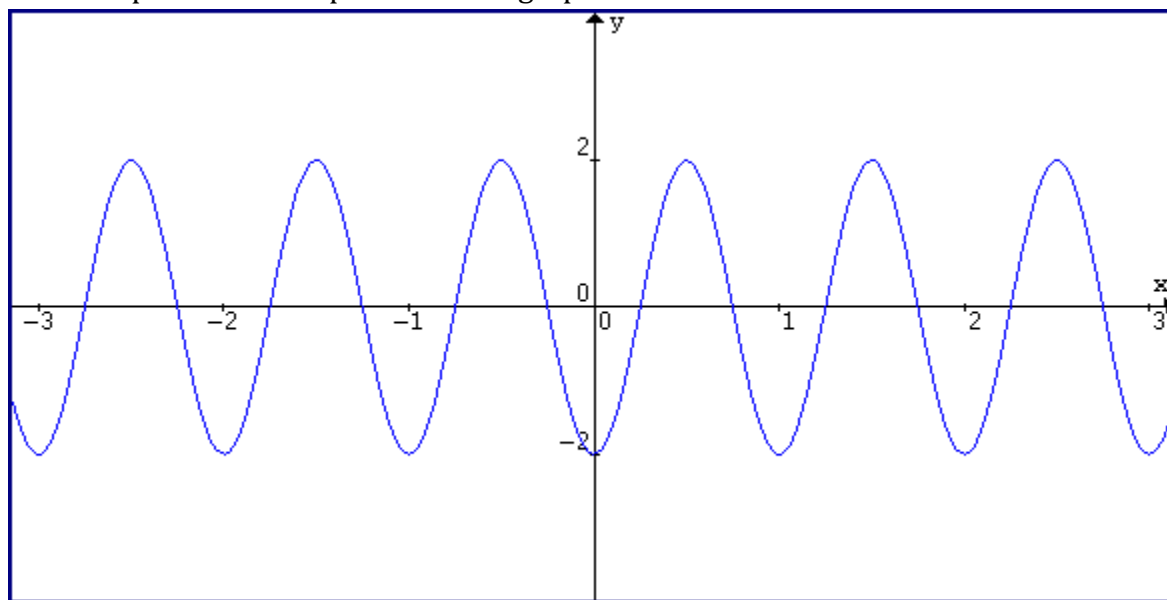
36. Which function is graphed below?



37. State the period and amplitude of the graph below.

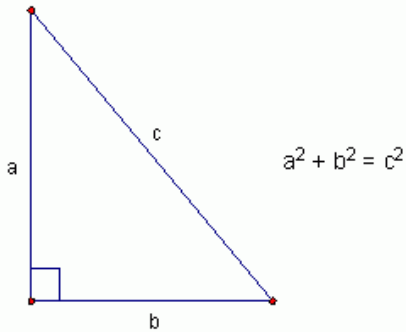


38. State the period and amplitude of the graph below.

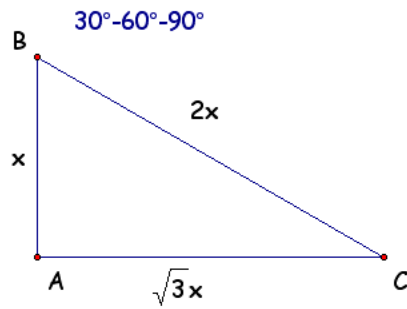


Triangle Review

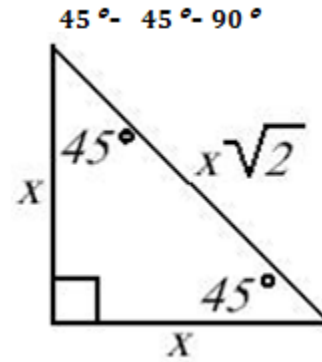
Pythagorean Theorem (8-1)



Special Right Triangles (8-2)

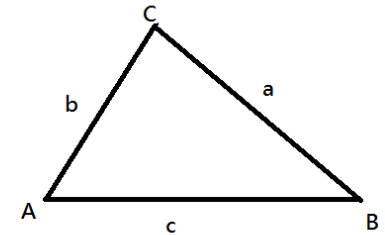


In a 30°-60°-90° triangle, the hypotenuse is twice as long as the shorter leg, and the longer leg is $\sqrt{3}$ times as long as the shorter leg.



Law of Sines (p. 522)

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

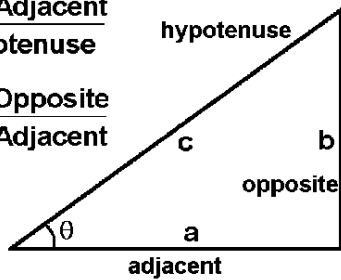


Trigonometry (8-3)

$$\sin \theta = \frac{\text{Side Opposite}}{\text{Hypotenuse}}$$

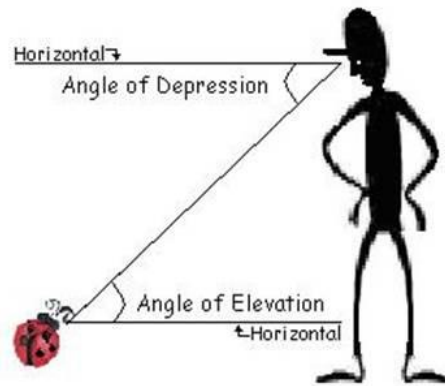
$$\cos \theta = \frac{\text{Side Adjacent}}{\text{Hypotenuse}}$$

$$\tan \theta = \frac{\text{Side Opposite}}{\text{Side Adjacent}}$$



SOH - CAH - TOA

Angles of Elevation/Depression (8-4)

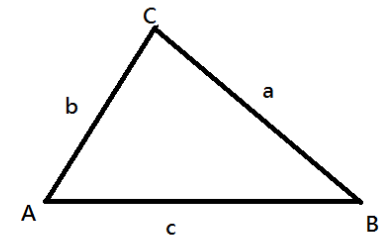


Law of Cosines (p. 522)

$$a^2 = b^2 + c^2 - 2bc \cdot \cos A$$

$$b^2 = a^2 + c^2 - 2ac \cdot \cos B$$

$$c^2 = a^2 + b^2 - 2ab \cdot \cos C$$



Triangles

Right Triangles

Non-Right Triangles

Special Right Triangles

Trig and Trig Inverses

Given SSS, SAS

Given ASA, AAS, or SSA

45-45-90

30-60-90

SOH CAH TOA

Law of Cosines

Law of Sines

$x : x : x\sqrt{2}$

$x : x\sqrt{3} : 2x$