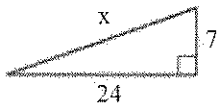
Unit 2 Day 1

Student: _____	**Instructor:** Natalie Walters	**Assignment:** Unit 2 Day 1 Right Triangle Trig
Date: _____	**Course:** AFM Fall 2015 1st Period	
Time: _____	**Book:** *Prentice Hall Algebra 2 ©2011	

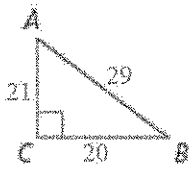
1. What is the value of x in simplest radical form?



x = ☐

(Simplify your answer. Type an exact answer, using radicals as needed.)

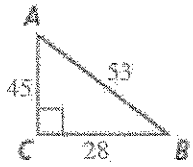
2. Write the ratio for **sin** A.



sin A = ☐

(Type an integer or a simplified fraction.)

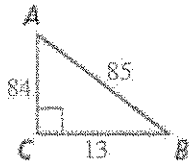
3. Write the ratio for **tan** A.



tan A = ☐

(Type an integer or a simplified fraction.)

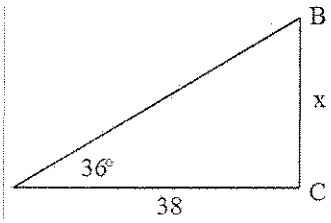
4. Write the ratio for **cos** B.



cos B = ☐

(Type an integer or a simplified fraction.)

5. Solve for x.

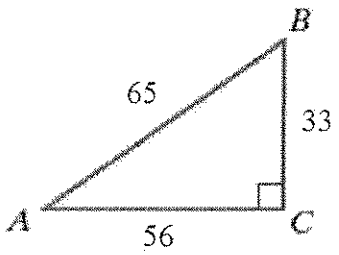


x = ☐ (Round to the nearest hundredth.)

Student: _____	**Instructor:** Natalie Walters	**Assignment:** Unit 2 Day 1 Right
Date: _____	**Course:** AFM Fall 2015 1st Period	Triangle Trig
Time: _____	**Book:** *Prentice Hall Algebra 2 ©2011	

6.

Use the given right triangle to find ratios, in reduced form, for sin A, cos A, and tan A.



Enter the ratios in reduced form:

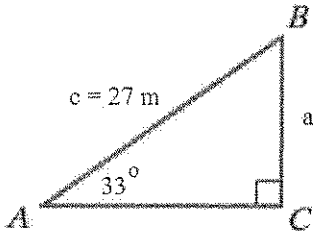
sin A = ☐

cos A = ☐

tan A = ☐

7.

Find the measure of side a.

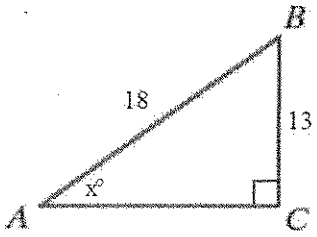


a = ☐ m

(Round the answer to the nearest whole number.)

8.

Find the value of x.

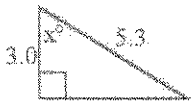


m∠x ≈ ☐°

(Round to the nearest degree as needed.)

Student: _____	**Instructor:** Natalie Walters	**Assignment:** Unit 2 Day 1 Right
Date: _____	**Course:** AFM Fall 2015 1st Period	Triangle Trig
Time: _____	**Book:** *Prentice Hall Algebra 2 ©2011	

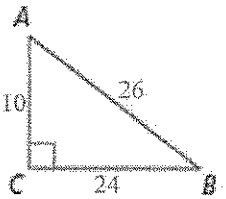
9. Find the value of x.



x = ☐

(Do not include the degree symbol in your answer. Round to the nearest degree as needed.)

10. The sine, cosine, and tangent ratios each have a reciprocal ratio. The reciprocal ratios are cosecant (**csc**), secant (**sec**), and cotangent (**cot**). Use ΔABC and the definitions below to write the ratio **sec** A.



$$\csc X = \frac{1}{\sin X} \qquad \sec X = \frac{1}{\cos X} \qquad \cot X = \frac{1}{\tan X}$$

sec A = ☐

(Type an integer or a simplified fraction.)

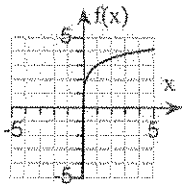
11. How does the graph of the following function compare with the graph of the parent function, $y = \log_b x$.

$y = \log_4 x + 3$

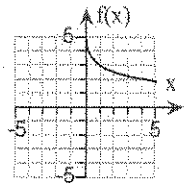
Choose the correct graph to the right.

This graph is the same as the parent graph except that it is shifted ☐ units [up / left / down / right].

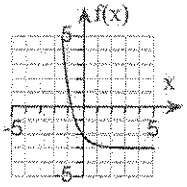
○A.



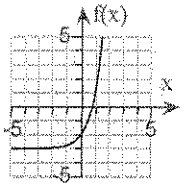
○B.



○C.



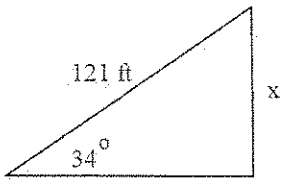
○D.



Unit 2 Day 2

Student: _____	**Instructor:** Natalie Walters	**Assignment:** Unit 2 Day 2 Right Triangle Trig Applications
Date: _____	**Course:** AFM Fall 2015 1st Period	
Time: _____	**Book:** *Prentice Hall Algebra 2 ©2011	

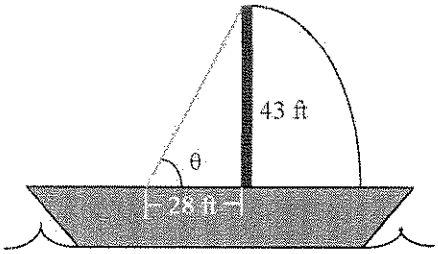
1. Find the value of x.



$x \approx$ ☐ ft

(Type an integer or decimal rounded to the nearest tenth.)

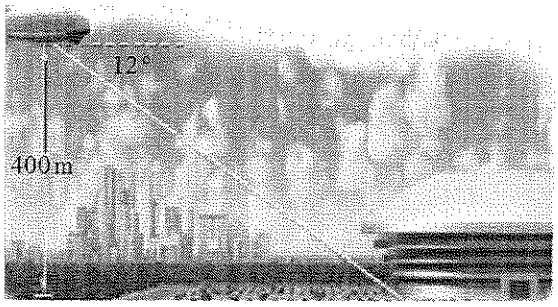
2. What is the angle of elevation of the sun when a 43-ft mast casts a 28 ft shadow?



The angle of elevation is ☐°.

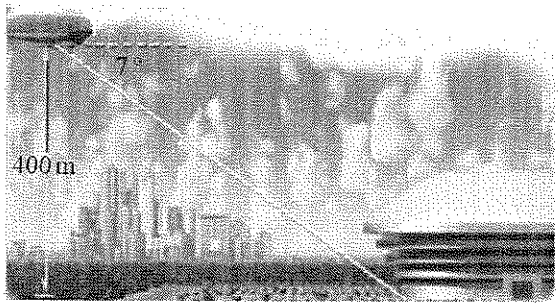
(Simplify your answer. Type an integer. Round to the nearest degree.)

3. A blimp provides aerial television views of a baseball game. The television camera sights the stadium at a 12° angle of depression. The altitude of the blimp is 400m. What is the line-of-sight distance from the television camera to the base of the stadium? Round to the nearest hundred meters.



The line-of-sight distance is approximately ☐ m.

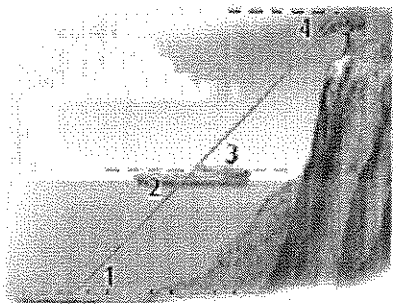
4. A blimp provides aerial television views of a soccer game. The television camera sights the stadium at a 7° angle of depression. The altitude of the blimp is 400m. What is the line-of-sight distance from the television camera to the base of the stadium? Round to the nearest hundred meters.



The line-of-sight distance is approximately ☐ m.

5. Describe the angle as it relates to the situation in the diagram.

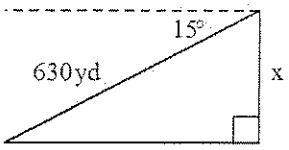
∠3



Choose the correct answer below.

- ○A. ∠3 is the angle of depression from the tree to the ship.
- ○B. ∠3 is the angle of depression from the ship to the tree.
- ○C. ∠3 is the angle of elevation from the ship to the tree.
- ○D. ∠3 is the angle of elevation from the tree to the ship.

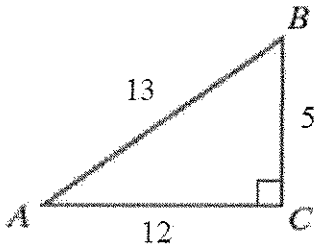
6. Find the value of x.



x = ☐ yd. (Round the final answer to the nearest tenth as needed. Round all intermediate values to the nearest thousandth as needed.)

7.

Use the given right triangle to find ratios, in reduced form, for sin A, cos A, and tan A.



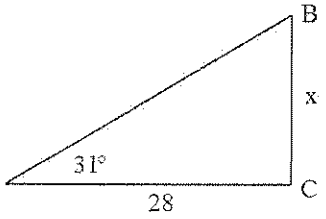
Enter the ratios in reduced form:

sin A = ☐

cos A = ☐

tan A = ☐

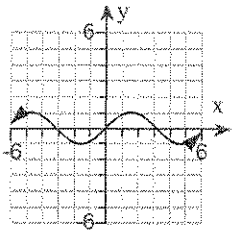
8. Solve for x.



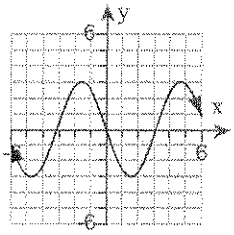
x = ☐ (Round to the nearest hundredth.)

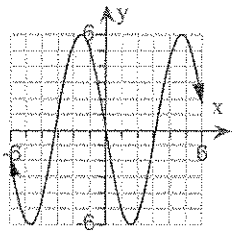
9. Using the graph of the function f(x) shown, sketch the graph of the transformed function.

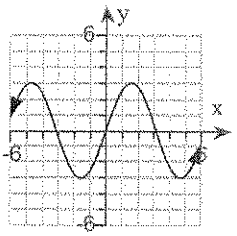
$-3f(x)$

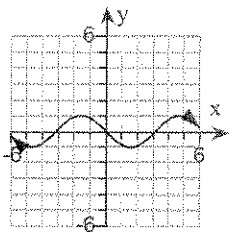


Choose the correct graph below.

A.


B.


C.


D.


10. Find the values of the six trigonometric functions for the angle in standard position determined by the point $(-15,8)$.

sin $\theta =$ ☐ (Type an integer or a simplified fraction.)

cos $\theta =$ ☐ (Type an integer or a simplified fraction.)

tan $\theta =$ ☐ (Type an integer or a simplified fraction.)

csc $\theta =$ ☐ (Type an integer or a simplified fraction.)

sec $\theta =$ ☐ (Type an integer or a simplified fraction.)

cot $\theta =$ ☐ (Type an integer or a simplified fraction.)

11. Solve the equation.

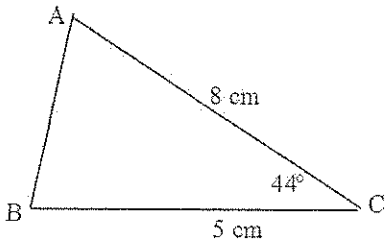
$2^x = 128$

$x =$ ☐ (Simplify your answer.)

Unit 2 Day 3

Student: _____	**Instructor:** Natalie Walters	**Assignment:** Unit 2 Day 3 Area of a Triangle
Date: _____	**Course:** AFM Fall 2015 1st Period	
Time: _____	**Book:** *Prentice Hall Algebra 2 ©2011	

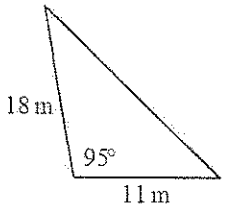
1. Find the area of the triangle.



What is the area of the triangle?

The area of the triangle is about ☐ cm^2.
(Round to the nearest tenth as needed.)

2. Find the area of the triangle shown to the right.



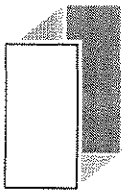
The area is ☐ m^2.
(Do not round until the final answer. Then round to the nearest tenth as needed.)

3. Find the area of the triangle.

$B = 43°$, $a = 9.9$ ft, $c = 2.3$ ft

The area of the triangle is ☐ ft^2.
(Do not round until the final answer. Then round to the nearest tenth as needed.)

4. An aerial photograph is taken of a building. The photograph is made when the angle of elevation of the sun is 21°. The shadow is determined to be 80 feet long. How tall is the building?



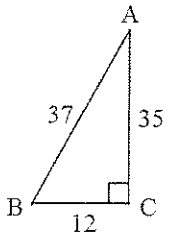
The building is approximately ☐ feet tall.
(Round to the nearest foot as needed.)

Student: _____	**Instructor:** Natalie Walters	**Assignment:** Unit 2 Day 3 Area of a Triangle
Date: _____	**Course:** AFM Fall 2015 1st Period	
Time: _____	**Book:** *Prentice Hall Algebra 2 ©2011	

5. In ΔABC, find each value.

a. sin A **b. sec** A **c. cot** A

d. csc B **e. sec** B **f. tan** B



a. sin A = ☐ (Type an integer or a simplified fraction.)

b. sec A = ☐ (Type an integer or a simplified fraction.)

c. cot A = ☐ (Type an integer or a simplified fraction.)

d. csc B = ☐ (Type an integer or a simplified fraction.)

e. sec B = ☐ (Type an integer or a simplified fraction.)

f. tan B = ☐ (Type an integer or a simplified fraction.)

6. In ΔABC, $\angle C$ is a right angle. Find the remaining side and angles.

$b = 4, c = 5$

a = ☐ (Round to the nearest tenth as needed.)

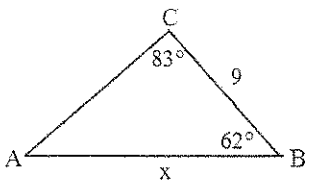
$m\angle A$ = ☐ ° (Round to the nearest tenth as needed.)

$m\angle B$ = ☐ ° (Round to the nearest tenth as needed.)

Unit 2 Day 4

Student: _____	**Instructor:** Natalie Walters	**Assignment:** Unit 2 Day 4 Law of Sines
Date: _____	**Course:** AFM Fall 2015 1st Period	
Time: _____	**Book:** *Prentice Hall Algebra 2 ©2011	

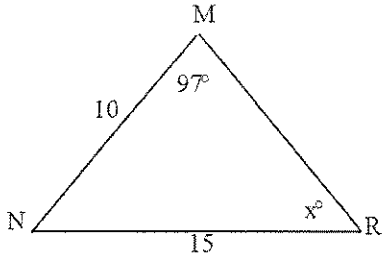
1. Use the law of sines to find the measure x.



$x \approx$ ☐

(Round to the nearest tenth as needed.)

2. Use the law of sines to find the measure x.



$x° \approx$ ☐°

(Round to the nearest tenth as needed.)

3. In ΔABC, $m\angle A = 61°$, $c = 15$ ft, and $a = 14$ ft. Use the Law of Sines to find $m\angle C$.

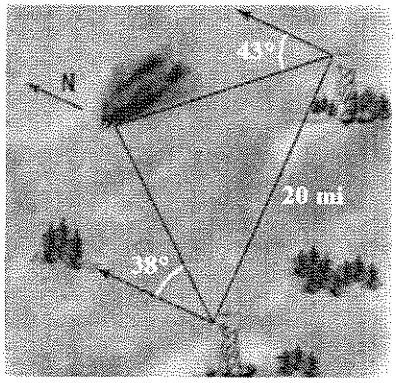
Select the correct choice and, if necessary, fill in the answer box to complete your choice.

○A. There is one possible measure for $\angle C$; $m\angle C =$ ☐°
(Round to the nearest tenth as needed.)

○B. There is more than one possible measure for $\angle C$.

Student: _____	**Instructor:** Natalie Walters	**Assignment:** Unit 2 Day 4 Law of Sines
Date: _____	**Course:** AFM Fall 2015 1st Period	
Time: _____	**Book:** *Prentice Hall Algebra 2 ©2011	

4. A forest ranger in an observation tower sights a fire 38° east of north. A ranger in a tower 20 miles due east of the first tower sights the fire at 43° west of north. How far is the fire from each tower?



The ranger to the west is ☐ miles from the fire and the ranger to the east is ☐ miles from the fire.
(Do not round until the final answer. Then round to the nearest tenth as needed.)

5. Find the area of the triangle.

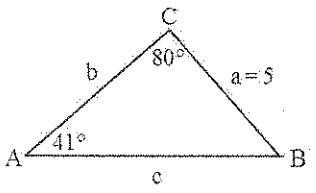
$B = 42°$, $a = 8.1$ ft, $c = 3.4$ ft

The area of the triangle is ☐ ft^2.
(Do not round until the final answer. Then round to the nearest tenth as needed.)

6. In ΔXYZ, $m\angle Y = 78$, $XY = 9$, and $XZ = 13$. To the nearest tenth, what is $m\angle Z$?

$m\angle Z =$ ☐
(Do not round until the final answer. Then round to the nearest tenth as needed.)

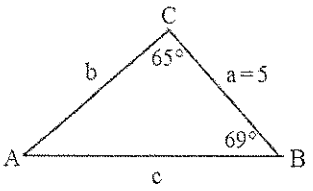
7. Use the Law of Sines to find the values of b and c.



$b \approx$ ☐
(Do not round until the final answer. Then round to the nearest tenth as needed.)

$c \approx$ ☐
(Do not round until the final answer. Then round to the nearest tenth as needed.)

8. Use the Law of Sines to find the values of b and c.



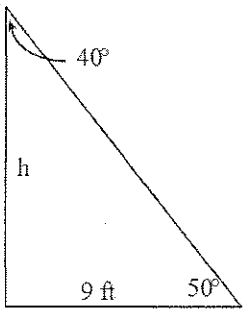
$b \approx$ ☐

(Do not round until the final answer. Then round to the nearest tenth as needed.)

$c \approx$ ☐

(Do not round until the final answer. Then round to the nearest tenth as needed.)

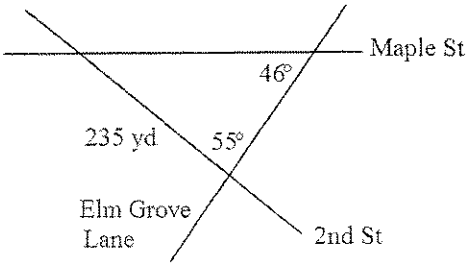
9. The main sail of a sailboat has the dimensions shown in the figure at the right. What is the height of the main sail?



The height of the sail is ☐ ft.

(Do not round until the final answer. Then round to the nearest tenth as needed.)

10. A portion of a city map is shown in the figure at the right. If you walk along Maple Street between 2nd Street and Elm Grove Lane, how far do you walk?



Maple Street is about ☐ yd long between 2nd Street and Elm Grove Lane.

(Do not round until the final answer. Then round to the nearest tenth as needed.)

Unit 2 Day 5

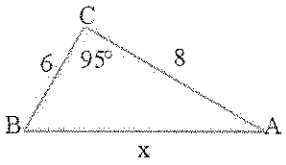
Student: _____	**Instructor:** Natalie Walters	**Assignment:** Unit 2 Day 5 Law of Cosines
Date: _____	**Course:** AFM Fall 2015 1st Period	
Time: _____	**Book:** *Prentice Hall Algebra 2 ©2011	

1. In ΔABC, $a = 19$ m, $b = 18$ m, and $c = 20$ m. Find $m\angle A$.

$m\angle A \approx$ ☐°

(Do not round until the final answer. Then round to one decimal place as needed.)

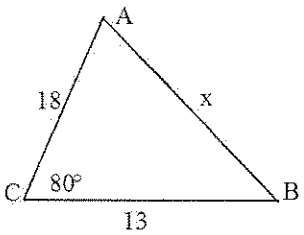
2. Use the law of cosines to find length x.



$x \approx$ ☐

(Round to the nearest tenth as needed.)

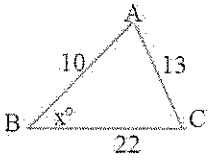
3. Use the Law of Cosines. Find length x.



$x =$ ☐

(Round the final answer to one decimal place as needed. Round all intermediate values to two decimal places as needed.)

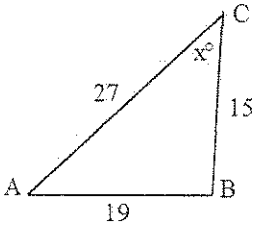
4. Use the law of cosines to find measure x.



$x° \approx$ ☐°

(Round to the nearest tenth as needed.)

5. Use the Law of Cosines. Find x.



$x° =$ ☐°

(Do not round until the final answer. Then round to one decimal place as needed.)

Student: _____	**Instructor:** Natalie Walters	**Assignment:** Unit 2 Day 5 Law of Cosines
Date: _____	**Course:** AFM Fall 2015 1st Period	
Time: _____	**Book:** *Prentice Hall Algebra 2 ©2011	

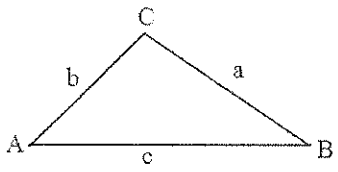
6. In ΔRST, $r = 17$ cm, $s = 11$ cm, and $m\angle T = 13°$. Find $m\angle S$.

$m\angle S =$ ☐°

(Type an integer or decimal rounded to one decimal place as needed.)

7. Find the remaining sides and angles in the triangle.

$a = 10,\ b = 2,\ C = 130°$



$c =$ ☐

(Round to two decimal places as needed.)

$A =$ ☐°

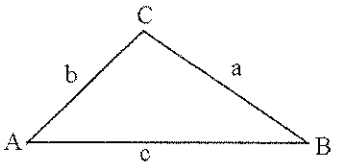
(Round to one decimal place as needed.)

$B =$ ☐°

(Round to one decimal place as needed.)

8. Find the remaining sides and angles of the triangle.

$a = 4.7,\ b = 4.5,\ c = 5.2$



$A =$ ☐° (Round to one decimal place as needed.)

$B =$ ☐° (Round to one decimal place as needed.)

$C =$ ☐° (Round to one decimal place as needed.)

9. In ΔABC, $m\angle A = 51°$ and $c = 6$ cm. Find $m\angle C$ for $b = 15.8$ cm.

$m\angle C =$ ☐°

(Type an integer or decimal rounded to one decimal place as needed.)

10. In ΔRST, $t = 9$ ft and $s = 16$ ft. Find r for $m\angle R = 45°$.

$r =$ ☐ ft

(Round the final answer to one decimal place as needed. Round all intermediate values to two decimal places as needed.)