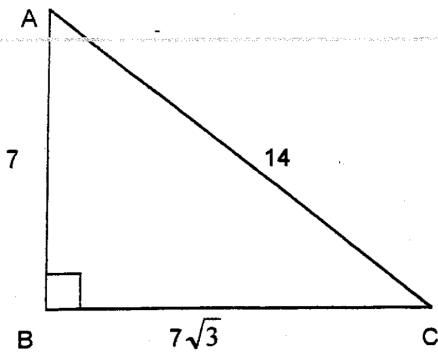# Unit 3 Study Guide

Name: _____

Use the Law of Sines and the Law of Cosines to find the missing sides and angles of each triangle. (Hint: Draw the Triangle for a visual picture.)
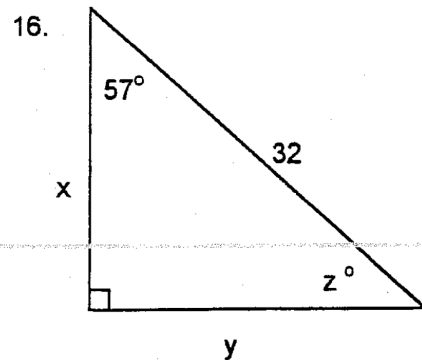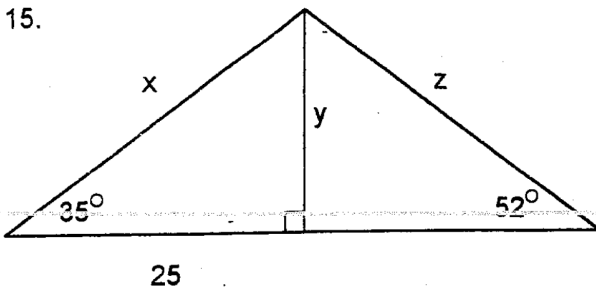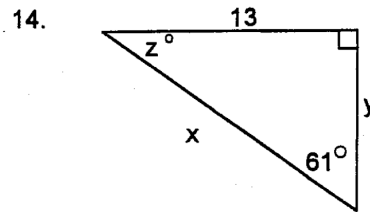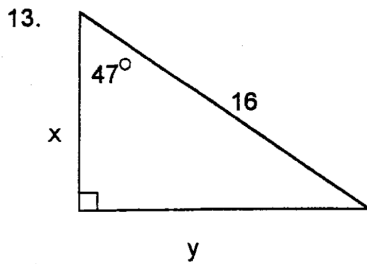
1. $a = 16$, $B = 32°$, and $C = 50°$

2. $a = 21$, $c = 30$, and $B = 42°$

3. $a = 5$, $b = 8$, and $c = 10$

4. $a = 12$, $b = 7.8$, and $B = 35°$

5. $a = 123$, $b = 155$, and $A = 55.2°$

FIND THE FOLLOWING RATIOS:

1. $\sin A = $ _____

2. $\cos A = $ _____ $m\angle A = $ _____

3. $\tan A = $ _____

4. $\sin C = $ _____

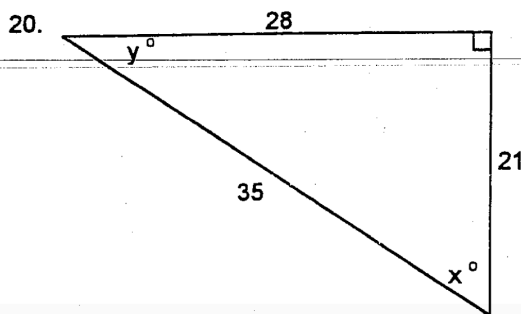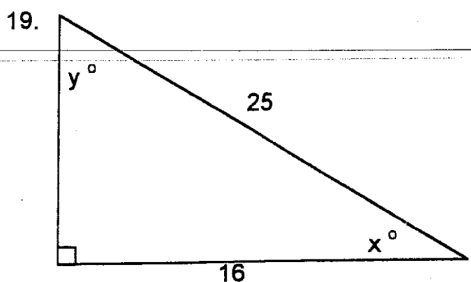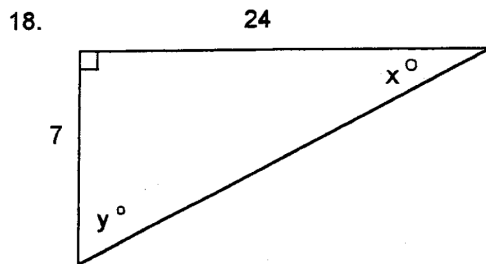5. $\cos C = $ _____ $m\angle C = $ _____
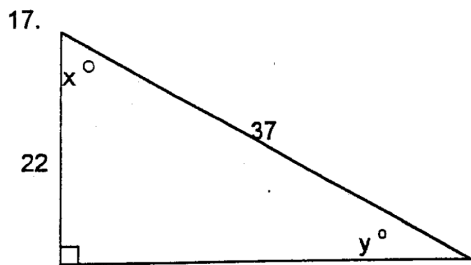
6. $\tan C = $ _____

USE TRIGONOMETRIC RATIOS TO FIND THE MISSING VARIABLES. ROUND TO NEAREST TENTH.

13.

14.

15.

16.

Unit 3 Study Guide

Name: _____

USE TRIGONOMETRIC RATIOS TO FIND THE MISSING ANGLE MEASURES. ROUND TO THE NEAREST DEGREE MEASURE.

17.

22 ... 37 ... $x°$ ... $y°$

18. 24

7 ... $x°$ ... $y°$

19.

$y°$ ... 25 ... 16 ... $x°$

20. 28

$y°$ ... 35 ... 21 ... $x°$

21. A kite is flying 115 ft above the ground. The length of the string to the kite is 150 ft, measured from the ground. Find the angle to the nearest degree that the string makes with the ground.

23. Suppose the angle of elevation from a ship to the top of a lighthouse on top of a cliff is 6°. The lighthouse is 60 ft tall and the cliff is 250 ft high. Find the distance from the ship to the base of the ship.

25. The angle of depression from an airplane flying at an altitude of 5000 ft to the closer end of the runway is 9°. Find the horizontal distance from the airplane to the runway.

26. The angle of elevation from the top of a tree looking up at a mountaintop is 26 degrees. If the 12-foot tall tree is 2000 feet away from the mountain, how tall is the mountain from its base to the top?

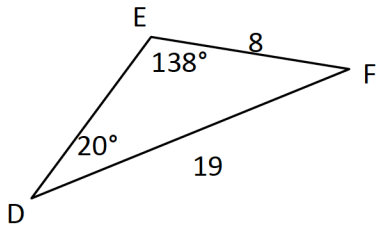15. Find the x to the nearest whole number.

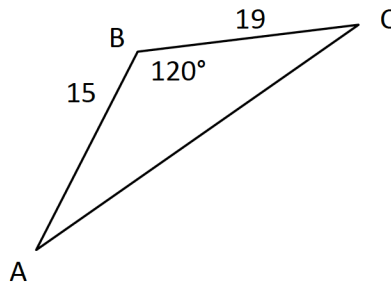16. Find the $m\angle A$ to the nearest whole degree.

Y
12 ... 148° ... x
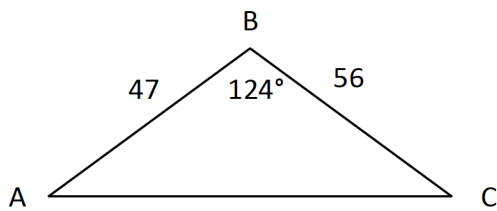X ... 25 ... Z

A ... C
42 ... 120° ... 16
B
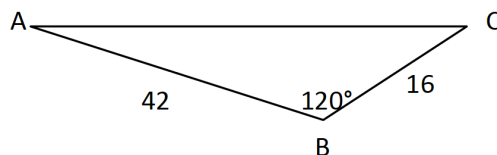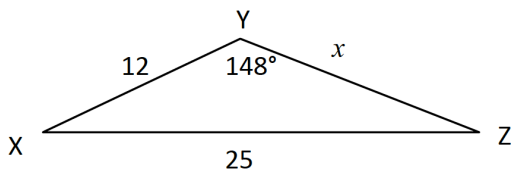
Name: _____

11. Find the missing dimensions of the triangle below. Round your answers to the nearest whole number.
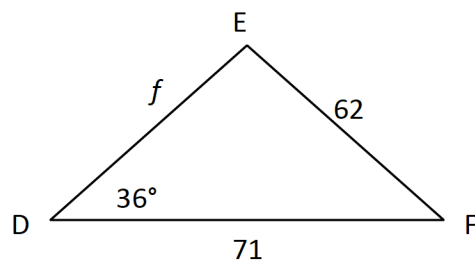
E
138°
8
F
20°
19
D

12. Find the $m\angle C$ to the nearest whole degree.

19
B
C
120°
15
A

13. Find the missing dimensions of the triangle below. Round your answers to the nearest whole number.

B
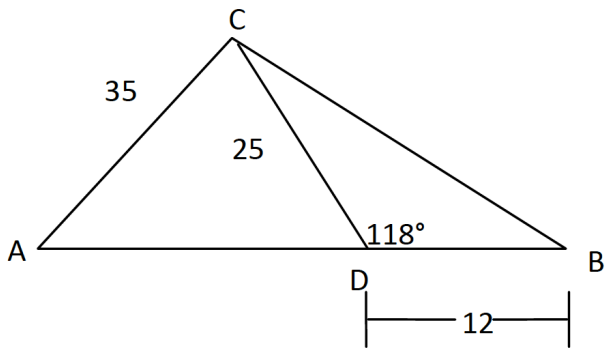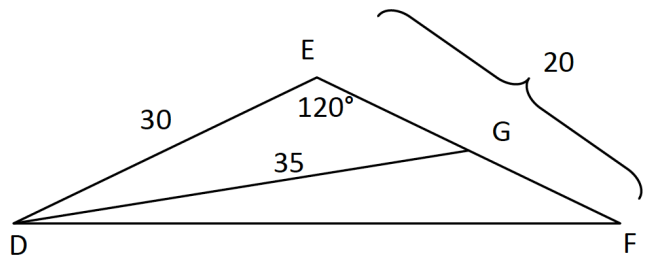47
124°
56
A
C

14. Find the f to the nearest whole number.

E
f
62
36°
D
71
F

17. Find the $m\angle A$ to the nearest whole degree.

C
35
25
118°
A
D
B
12

18. Find the $m\angle DGF$ to the nearest whole degree.

E
20
30
120°
35
G
D
F

20. Find the angle measurements of all angles in the triangle below to the nearest whole degree.

B
14
17
A
C
19