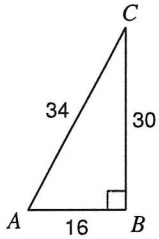
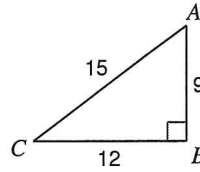
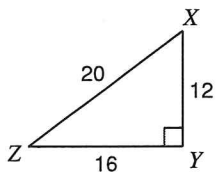
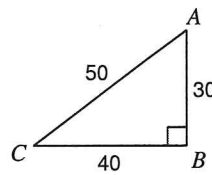
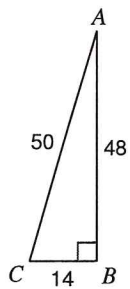
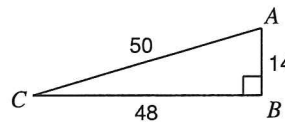
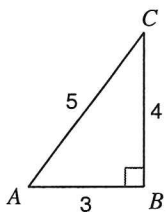
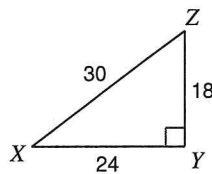
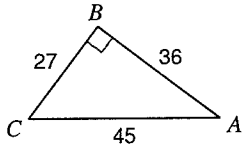


Finding Trigonometric Ratios

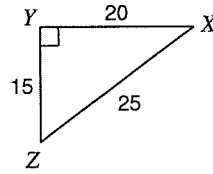
Find the value of each trigonometric ratio to the nearest ten-thousandth.

1) $\tan A$ 2) $\cos C$ 3) $\sin Z$ 4) $\sin C$ 5) $\sin C$ 6) $\sin C$ 7) $\cos A$ 8) $\cos X$ 

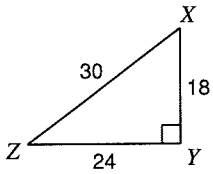
9) $\cos A$



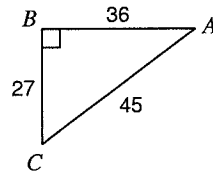
10) $\cos Z$



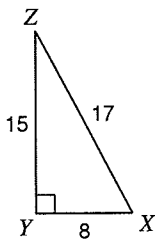
11) $\sin Z$



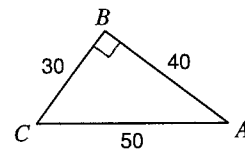
12) $\sin C$



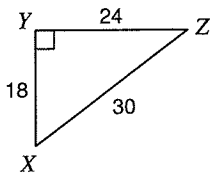
13) $\cos X$



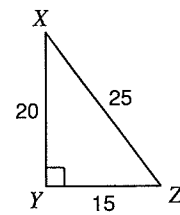
14) $\tan A$



15) $\tan X$



16) $\tan X$



Use a calculator to find the value of each to the nearest ten-thousandth.

17) $\sin 21^\circ$

18) $\tan 22^\circ$

19) $\cos 20^\circ$

20) $\sin 77^\circ$

21) $\tan 17^\circ$

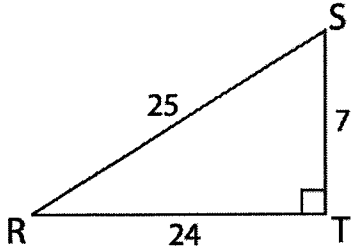
22) $\cos 87^\circ$

Name: _____

Worksheet 3-1

Date: _____ Period: _____

1. Using the given triangle, write the trig ratios in fraction and decimal form.



Sin R =

Sin S =

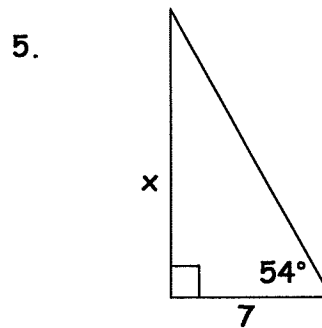
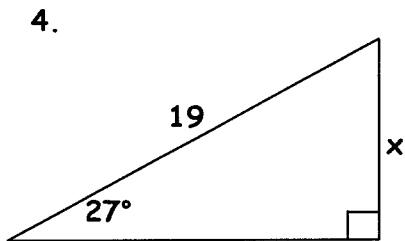
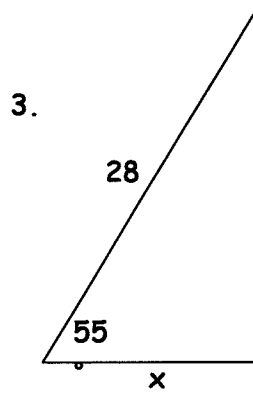
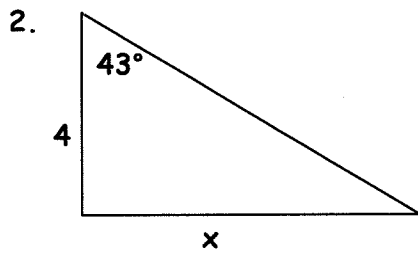
Cos R =

Cos S =

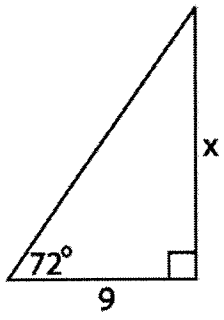
Tan R =

Tan S =

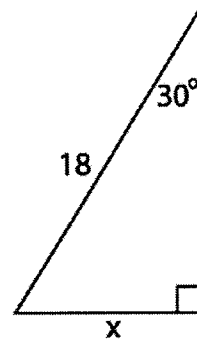
For problems 2 - 8, find the value of x.



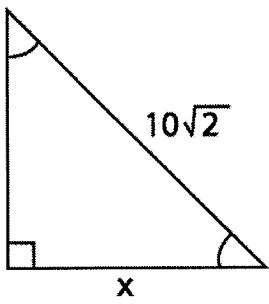
6.



7.

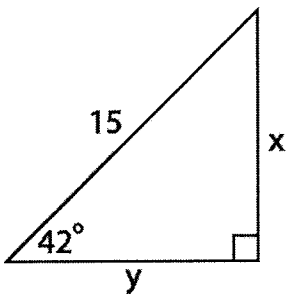


8.

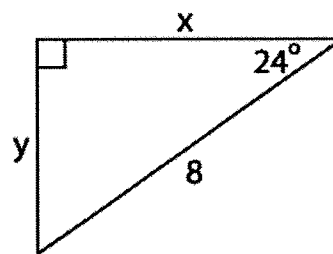


For problems 9 - 10, find the values of x and y .

9.



10.



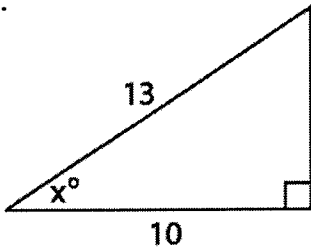
Name: _____

Worksheet 3-2

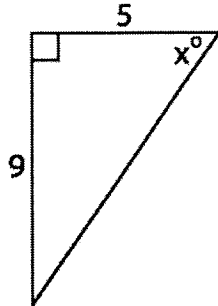
Date: _____ Period: _____

For problems 1 - 3, find the missing angle measure.

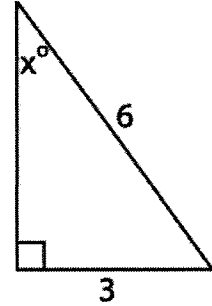
1.



2.

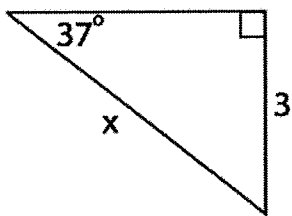


3.

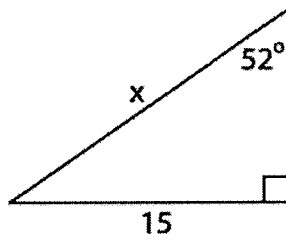


For problems 4 - 12, find the value of x .

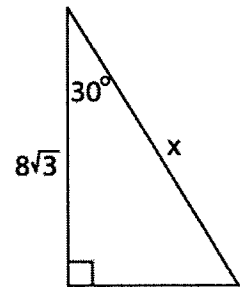
4.



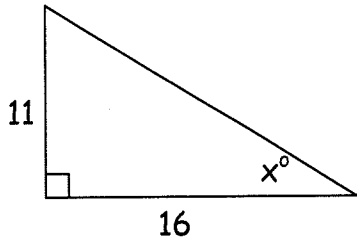
5.



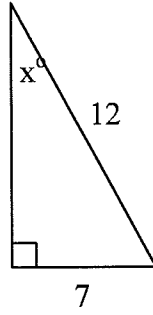
6.



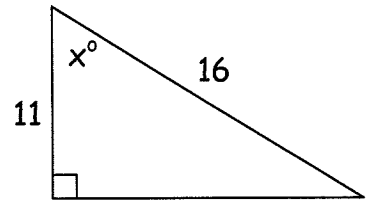
7.



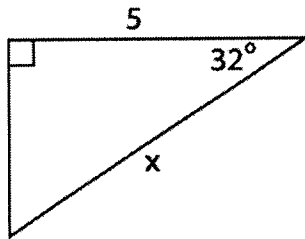
8.



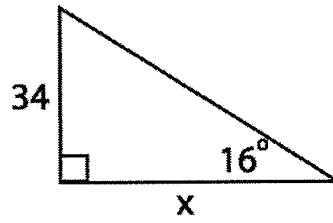
9.



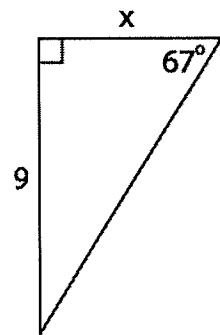
10.



11.



12.



6. A pilot flying over level ground at an altitude of 2400 ft sights a building. The angle of depression from the pilot to the building measures 6° . Find the ground distance between the building and the point directly below the pilot.

7. The angle of depression from the top of a lighthouse to a boat is 27° . If the direct distance from the top of the lighthouse to the boat is 462 ft, find the distance from the base of the lighthouse to the boat.

8. From the top of a tower, the angle of depression to a stake on the ground is 72° . The top of the tower is 80 feet above the ground. How far is the distance between the top of the tower and the stake?

9. A ski slope is 550 yards long with a vertical drop of 130 yards. Find the angle of depression of the slope.

10. An airplane is flying at an altitude of 1000 m. A tree is located 3500 m from a point directly below the plane. Find the angle of depression from the plane to the tree.

Name: _____

Worksheet 3 - 3

Date: _____ Period: _____

1. A building 275 ft tall casts a 160 ft shadow on the ground. Find the measure of the angle of elevation to the top of the building for an observer standing at the tip of the building's shadow.

2. A 40 ft ladder is leaning against a building. The ladder forms a 70° angle with the ground. How far is the bottom of the ladder from the base of the building?

3. A woman wants to use a 10 foot ladder to get to a window 8 ft above the ground. At what angle to the ground does the ladder need to be set?

4. At a point on the ground 125 ft from the base of a tower, the angle of elevation to the top of the tower has a degree measure of 38° . How high is the tower?

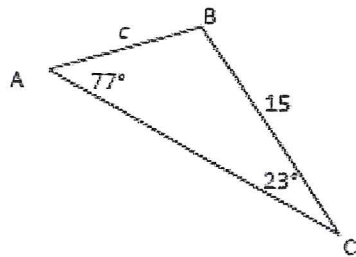
5. A 172 ft tall tree casts a shadow on the ground. If the angle of elevation is 49° , find the distance from the top of the tree to the tip of the shadow.

worksheet 3-4

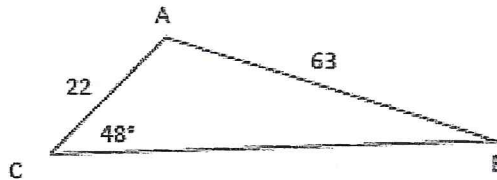
Law of Sines Practice

Find the length of a side or measure of an angle using Law of Sines.

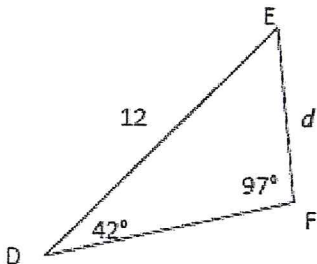
1. For $\triangle ABC$ find c to the nearest hundredth.



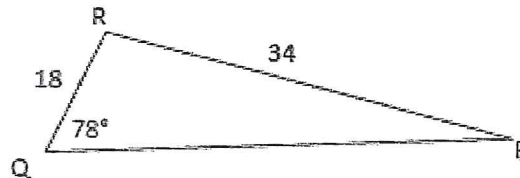
2. For $\triangle ABC$ find $m\angle B$ to the nearest whole degree.



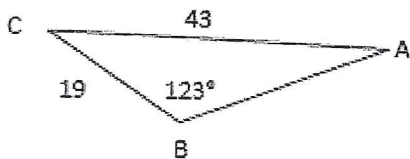
3. For $\triangle DEF$ find d to the nearest hundredth.



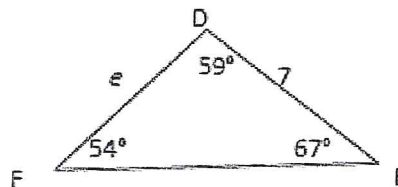
4. For $\triangle PQR$ find $m\angle P$ to the nearest whole degree.



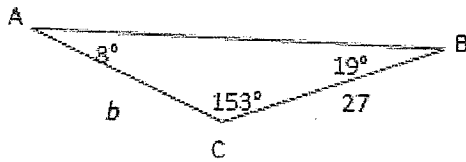
5. For $\triangle ABC$ find $m\angle A$ to the nearest whole degree.



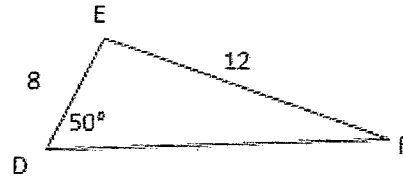
6. For $\triangle DEF$ find e to the nearest hundredth.



7. For $\triangle ABC$ find b to the nearest hundredth.



8. For $\triangle DEF$ find $m\angle F$ to the nearest whole degree.



9. For $\triangle ABC$, $a = 18$, $b = 6$, and $m\angle A = 28^\circ$. Find $m\angle B$ to the nearest whole degree.

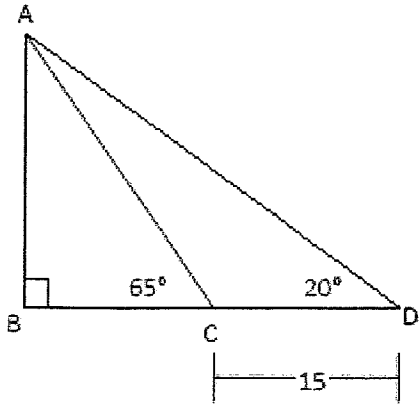
10. For $\triangle DEF$, $d = 24$, $m\angle D = 37^\circ$, and $m\angle E = 49^\circ$. Find e to the nearest whole degree.

11. For $\triangle DEF$, $d = 54$, $f = 27$, $m\angle D = 20^\circ$. Find $m\angle F$ to the nearest whole degree.

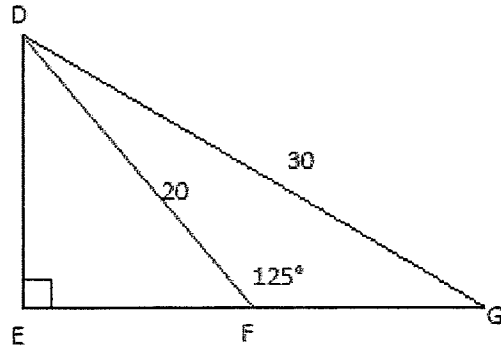
12. For $\triangle ABC$, $a = 42$, $c = 72$, and $m\angle C = 41^\circ$. Find $m\angle A$ to the nearest whole degree.

III. Challenge Problems

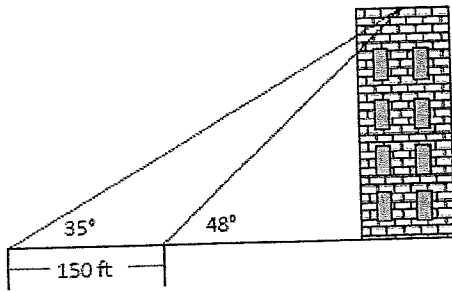
19. For the figure below find BC to the nearest whole number. $CD=15$.



20. For the figure below find $m\angle EDG$ to the nearest whole degree.



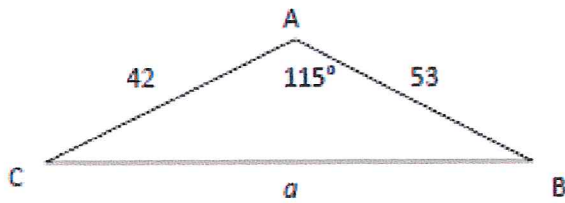
21. Find the height of the building in the figure below to the nearest foot.



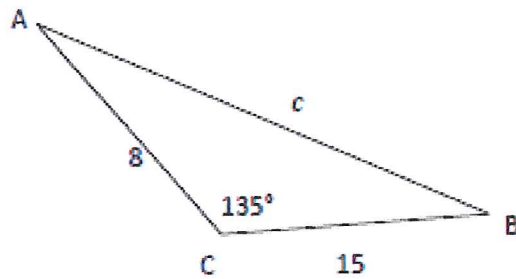
Worksheet 3-5

1. Find the length of a side using Law of Cosines.

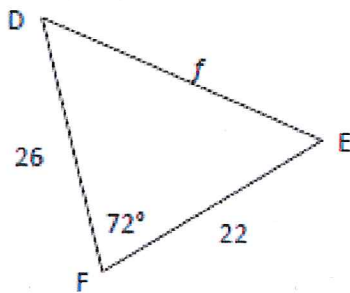
1. For $\triangle ABC$ find a to the nearest hundredth.



2. For $\triangle ABC$ find c to the nearest hundredth.

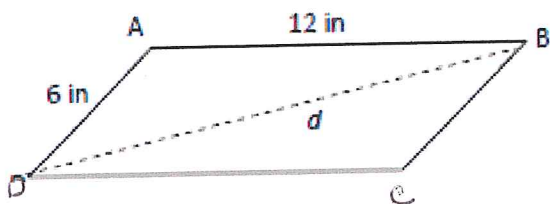


3. For $\triangle DEF$ find f to the nearest hundredth.

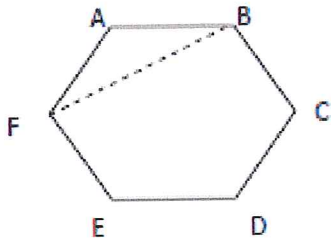


5. For $\triangle ABC$ find the length of c to the nearest hundredth, given $a = 54$, $b = 47$, and $m\angle C = 85^\circ$.

6. Find the length of the diagonal, d , of the parallelogram below to the nearest inch.



7. A regular hexagon has side lengths of 15 centimeters and angles that measure 120° . Find FB to the nearest centimeter.



III. Find the measure of an angle using Law of Cosines.

8. For $\triangle ABC$ find $m\angle A$ to the nearest tenth of a degree.
9. For $\triangle ABC$ find $m\angle B$ to the nearest tenth of a degree.

