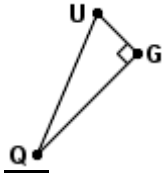
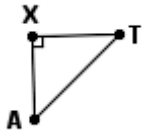
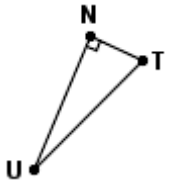
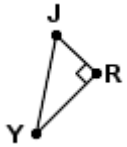
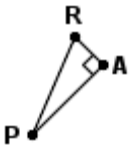
First name: _____ Last name: _____ Student ID: _____

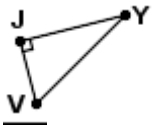
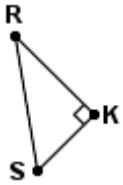
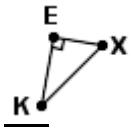
Chapter 6 Trigonometry 1 Homework

1. Use a calculator to solve. Round to the nearest hundredth.

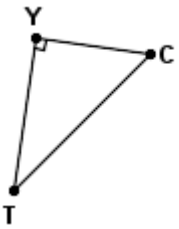
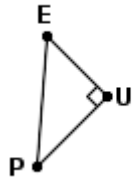
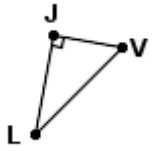
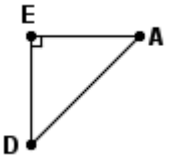
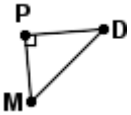
1. cos 73 °	2. cos 74.5 °	3. tan 81 °
4. sin 59 °	5. sin 33 °	6. tan 75 °
7. tan 38.9 °	8. tan 57 °	9. cos 17 °
10. cos 4 °	11. sin 85 °	12. sin 23.5 °

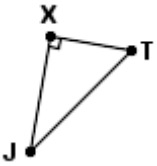
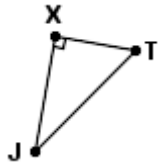
2. Complete. Round to the nearest hundredth.

1. Find cos U  $\overline{QG}$ = 14.2 $\overline{GU}$ = 5.6 $\overline{QU}$ = 15.26	2. Find tan B  $\overline{BM}$ = 3.6 $\overline{VM}$ = 5.1 $\overline{BV}$ = 6.24	3. Find sin T  $\overline{AT}$ = 0.41 $\overline{AX}$ = 0.28 $\overline{TX}$ = 0.3
4. Find sin T  $\overline{UT}$ = 8.62 $\overline{UN}$ = 8 $\overline{TN}$ = 3.2	5. Find cos Y  $\overline{YJ}$ = 4.55 $\overline{YR}$ = 3.8 $\overline{RJ}$ = 2.5	6. Find tan R  $\overline{PA}$ = 0.76 $\overline{AR}$ = 2.5 $\overline{PR}$ = 2.61

7. Find tan Y  $\overline{VY}$ = 20.94 $\overline{VJ}$ = 10.7 $\overline{YJ}$ = 18	8. Find cos R  $\overline{KR}$ = 27.5 $\overline{SR}$ = 29.26 $\overline{SK}$ = 10	9. Find sin X  $\overline{KX}$ = 4.12 $\overline{KE}$ = 0.97 $\overline{XE}$ = 4

3. Find the value of x.

1.  ∠N = 33.06 ° NY = *x* YC = 5.4	2.  ∠C = 52.67 ° TY = 5.9 CY = *x*	3.  ∠E = 49.42 ° PU = 12.25 PE = *x*
4.  ∠V = 55.05 ° VJ = 5.8 LJ = *x*	5.  ∠A = 44.99 ° AE = 13.5 DA = *x*	6.  ∠M = 50.39 ° MD = *x* MP = 0.51

7.  $\angle B = 54.16^\circ$ BV = *x* BM = 2.6	8.  $\angle T = 55.13^\circ$ JX = *x* JT = 6.46	9.  $\angle J = 63.18^\circ$ JX = *x* TX = 4.8

Word problems

1. The leaning tower of Pisa is approximately 179 ft in "height" and is approximately 16.5 ft out of plumb. Find the angle at which it deviates from the vertical.

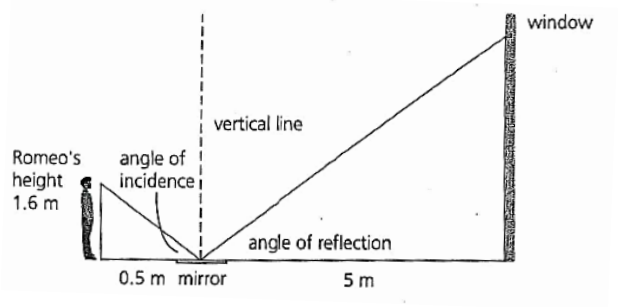
2. An isosceles triangle has a base of 22 cm and a vertex angle of 36˚. Find the perimeter of the triangle. (Hint: remember an isosceles triangle has two sides and two angles the same and the vertex angle is at the top)

3. The sides of a rectangle are 3" and 4". Find the lesser (smaller) angle formed by a side and a diagonal of the rectangle.

4. Find the area of an isosceles triangle in which the lengths of the equal sides are 2.4 cm and one angle measures 118˚.

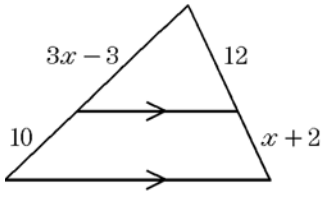
5. A 20 ft ladder leans against a building 30 ft high. The base of the ladder forms a 72˚ angle with the ground. How far below the top of the building is the top of the ladder?

6. Romeo uses a mirror to determine the height of Juliet's window. He knows that when light is reflected from a mirror, it makes the same angle on both sides of the point where it strikes the mirror. (The angle of incidence equals the angle of reflection.) How high is the window from the ground?



7. A 40-foot flagpole casts a 25-foot shadow. Find the shadow cast by a nearby building 200 feet tall. (draw a diagram and solve)

8. Solve for x.



9. A tower 150 ft in height casts a shadow 50.5 ft long. Find the angle of elevation of the sun.

10. If the height of a pole is 75.4 ft, find the distance from the foot of the pole an observer must stand so that the angle of elevation to the top of the pole is 41˚.

11. The angle of depression from a person on top of a building to a point 20 meters from the base of the building is 42˚. What is the height of the building?