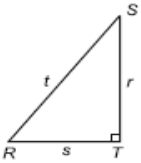
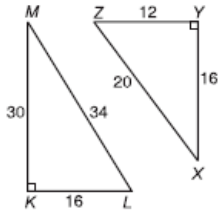
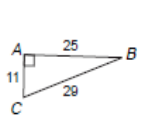
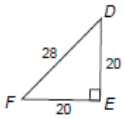
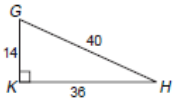
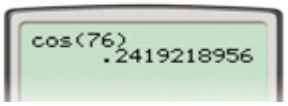
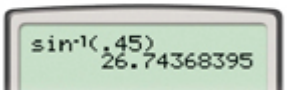
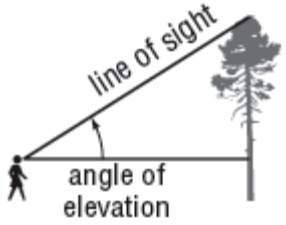
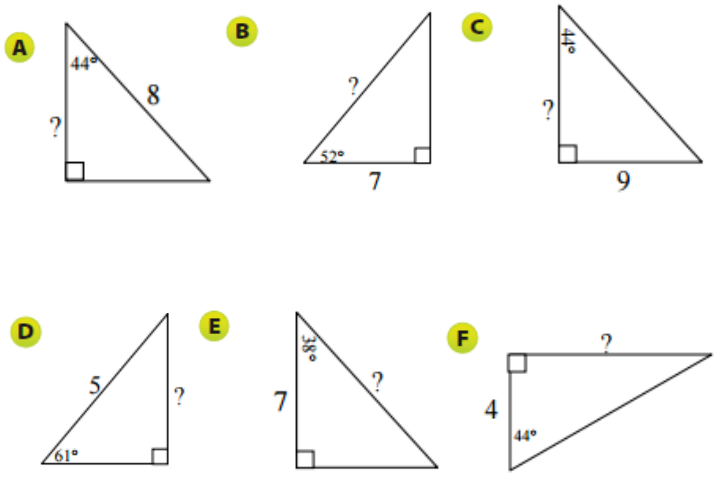
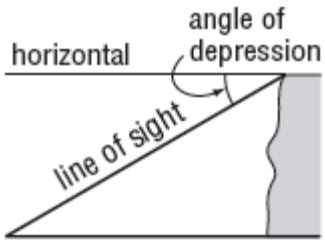
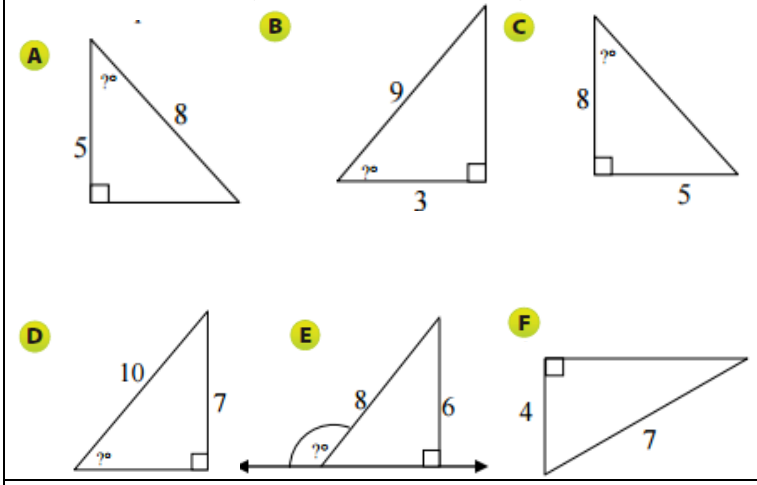
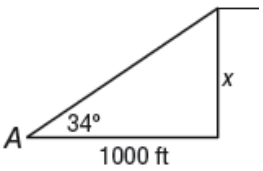
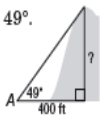
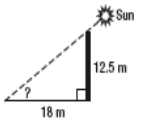
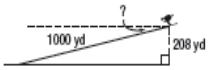
Name: _____ # _____

Geometry: Period _____
Ms. Pierre
Date: _____

CUMULATIVE UNIT 3 REVIEW

Use the following to review for you test. Work the Practice Problems on a separate sheet of paper.

Key Standards	Study Tips	Practice Questions
Trigonometric Ratios	• A ratio of the lengths of two sides of a right triangle is called a **trigonometric ratio**. • Use the right triangle below to show trigonometric ratios  $\sin R = \frac{\text{leg opposite } \angle R}{\text{hypotenuse}} = \frac{r}{t}$ $\cos R = \frac{\text{leg adjacent to } \angle R}{\text{hypotenuse}} = \frac{s}{t}$ $\tan R = \frac{\text{leg opposite to } \angle R}{\text{leg adjacent to } \angle R} = \frac{r}{s}$	1. Find the indicated trigonometric ratio as a fraction and as a decimal rounded to th nearest ten-thousandth  A $\sin M$ B $\cos Z$ C $\tan L$ D $\sin X$ E $\cos L$ F $\tan Z$ 2. Find each sine or cosine. Round to four decimal places, if necessary.    A $\sin B$ B $\cos C$ C $\cos B$ D $\sin D$ E $\sin F$ F $\cos G$
Calculating Trigonometric Ratios	• To calculate trigonometric ratios, make sure you calculator is in <u>degree mode</u> For Example: A $\cos 76°$  B $\sin^{-1}(0.45)$  	3. Use your calculator to find each trigonometric ratio. Round to the nearest hundredth. A $\tan 51°$ B $\sin 80°$ C $\cos 77°$ D $\tan 14°$ E $\sin 55°$ F $\cos 48°$ 4. Use your calculator to find each angle measure to the nearest degree. A $\tan^{-1}(2.1)$ B $\cos^{-1}\left(\frac{1}{3}\right)$ C $\cos^{-1}\left(\frac{5}{6}\right)$ D $\sin^{-1}(0.5)$ E $\sin^{-1}(0.61)$ F $\tan^{-1}(0.09)$
Writing Equivalent Statements (Complementary)	• The **Sine** of an acute angle is EQUAL to the **Cosine** of the complement of that angle. • **Complement** is the sum of 90°	5. Write the complementary angle. A Given that $\sin 15° \approx 0.259$, write the cosine of a complementary angle. Given that $\cos 62° \approx 0.469$, write the sine of a complementary angle.

	For example: **A** Write sin 42° in terms of the cosine. $\sin 42° = \cos(90 - 42)°$ $= \cos 48°$	6. **B** Write an equivalent statement in the terms given. Write sin 28° in terms of the cosine. Write cos 51° in terms of the sine.
Finding Missing SIDE of Right Triangles	• Many real-world problems that involve looking up to an object can be described in terms of an **angle of elevation**, which is the angle between an observer's line of sight and a horizontal line. 	7. Find the missing side of each triangle below. 
Finding Missing ANGLE of Right Triangles	• When an observer is looking down, the **angle of depression** is the angle between the observer's line of sight and a horizontal line. 	8. Find the missing angle of each triangle below. 
Solving Problems with Right Triangles	For example:  Let x = the height of the cliff. $\tan 34° = \frac{x}{1000}$ $\tan = \frac{\text{opposite}}{\text{adjacent}}$ $1000(\tan 34°) = x$ Multiply each side by 1000. $674.5 = x$ Use a calculator. The height of the cliff is about 674.5 feet.	9. Solve each problem. **A** **HILL TOP** The angle of elevation from point A to the top of a hill is 49°. If point A is 400 feet from the base of the hill, how high is the hill?  **B** **SUN** Find the angle of elevation of the Sun when a 12.5-meter-tall telephone pole casts an 18-meter-long shadow.  **C** **SKIING** A ski run is 1000 yards long with a vertical drop of 208 yards. Find the angle of depression from the top of the ski run to the bottom.  **D** **AIR TRAFFIC** From the top of a 120-foot-high tower, an air traffic controller observes an airplane on the runway