Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CW:\_\_\_\_\_\_\_\_\_\_\_\_\_HW:\_\_\_\_\_\_\_\_\_\_

**Unit 5: Trigonometry Part 1**

AFM Spring 2017

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| --- | --- | --- | --- | --- |
| **Date** | **Day** | **Topics Covered** | **Classwork** | **Assignments** |
| Thursday3/30 | 1 | Right Triangle Trigonometry | worksheet | 92% | 84% | 76% | 68% | 60% |
| Day 1 Homework |
| Friday3/31 | 2 | Law of Sines | Law of Sines Practice Worksheet | 92% | 84% | 76% | 68% | 60% |
| Day 2 Homework |
| Monday4/3 | 3 | Law of Cosines | The Law of Cosines Practice Worksheet | 92% | 84% | 76% | 68% | 60% |
| Day 3 Homework |
| Tuesday4/4**Tutorials B Lunch** | 4 | **Application****Problems** | Practice Problems | 92% | 84% | 76% | 68% | 60% |
| Day 4 Homework |
| Wednesday4/5 | 5 | Application ProblemsDay 2 | What’s green and loud? | 92% | 84% | 76% | 68% | 60% |
| Day 5 Homework |
| Thursday4/6Tutorials | 6 | MAJOR QUIZ | Applications of Trig CW Worksheet | 92% | 84% | 76% | 68% | 60% |
| Day 6 Homework |
| Friday4/7 | 7 | Intro to the Unit Circle | Unit Circle Mini Project | 92% | 84% | 76% | 68% | 60% |
| SPRING BREAK ENJOY!!!!! |
| Monday4/17 | 8 | Unit Circle & Angle Measure | Unit Circle Angle Measures Worksheet  | 92% | 84% | 76% | 68% | 60% |
| Day 8 Homework |
| Tuesday4/18**Tutorials A Lunch** | 9 | Review – Study GuideBegin Unit 6 (Day 1)  | Study Guide | 92% | 84% | 76% | 68% | 60% |
| Study Guide |
| Wednesday4/19 | 10 | **TEST**  |  | 92% | 84% | 76% | 68% | 60% |
|  |
| Monday4/27 | 11 | Benchmark ReviewFinish Unit 6 (Day 1) | Go over Study Guide | 92% | 84% | 76% | 68% | 60% |
| **Study for Test!!!** |
| Tuesday4/28**Tutorials B Lunch** | 12 | **Benchmark #3** | Warm-Ups: | Homework from Unit 6 – Day 1 |

**Unit 5 – Trigonometry (Part 1)**

**Homework 1** – Right Triangle Trigonometry

Given the following situations, solve the triangle completely (find each angle and each side length). Assume that each is based on a right triangle, and round each answer to the hundredths place.

1. 2.









3. A triangle with a leg length of 17 and an opposte angle measure of 23.

4. A triangle with a hypotenuse length of 27 and an angle measure of .

5. A triangle with a leg length of 12 and a hypotenuse length of 13.

6. Find an example of a right triangle you can’t easily measure in life (the height of a tree, the distance across a pond or stream, the angle measure of a ramp). Describe the situation, how you would solve it using trigonometry, and provide evidence that you determined the pertinent measurement. (Yes, really do this!)

**Homework 2** – Law of Sines (non-right triangles)

Given the following situations, solve the triangle completely (find each angle and each side length), and round each answer to the hundredths place. (Note: pictures are not drawn to scale.)

1. 2.

















3. 4.









5. Determine which of the four cases above is ambiguous. As accurately as possible, draw to the two possible triangles, and label them completely with their side and angle measures.

**Homework 3** – Law of Cosines (non-right triangles)

Given the following information, draw, and solve each triangle.

3. A triangle which has side lengths 56 and 72 with an included angle of 

2. A triangle which has side lengths 6 and 12 with an included angle of .

1. A triangle which has side lengths 4, 5, and 8.

**Homework 4 & 5** – Trig Application

1. A searchlight located 200 meters from a weather office is turned on. If the angle of elevation to the spot of light on the clousds is 35˚, how high is the cloud ceiling?

2. A plane flies on a straight course. On the ground directly below the flight path, observers 2 miles apart spot the plane between them at the same time. The plane’s angle of elevation is from one observation point and from the other. How high is the plane off the ground?

3. A 24-foot ladder leaning against the side of a house makes a 70 degree angle with the ground. How far up the side of the house does the ladder reach?

4. A support guy wire is stretched from a broadcasting tower at a point 200 feet above ground to an anchore 110 feet from the base of the tower. If three guy wires are needed to anchor the tower, then how much wire is needed?

5. From a point 65 feet from the base of a tree, the angle of elevation to the top of the tree is 35.6 degrees. Find the height of the tree.

6. From a 125-foot observation tower on the coast, an observer sights a boat. The angle of depression of the boat is 6 degrees. How far is the boat from the coast?

**Homework 6** – Trig Application

1. Alliya is taking a wlak along a straiht road. She decides to leave the road, so she walks on a path that makes an angle of 35 degrees with the road. After walking for 450 meters, she turns 75 degrees and heads back towards the road.
a. How far does Alliya need to walk on her current path to get back to the road?

b. When Alliya returns to the road, how far along the road is she from shere she started?

2. Tom, Dick, and Harry are camping in their tents. If the distance between Tom and Dick is 153 feet, the distance between Tom and Harry is 201 feet, and the distance between Dick and Harry is 175 feet, what is the angle between Dick, Harry, and Tom?

3. At the birthday party, there was only one balloon bundle set up and it was in the middle of everything. The light was shining down on the balloon bundle at an angle so it created a shadow. Gave’s friend, Dan, wondered how long the shadow would be. Gave told him that the balloon bundle’s height was 1.75 m. Dan figured that the balloon bundle was perpendicular to the ground, creating a 90˚ angle from the floor. From the way the light was directed, it created a 64˚ angle. How far would the shadow be in centimeters?
(hint: 1m = 100 cm)

4. A motocross race runs along a triangular course marked by corners A, B, and C. The motocross race starts with the riders heading West for 3700 meters. The other two straight-aways of the course lie North of the first straight. Their lengths are 1700 meters and 3000 meters. Draw a figure that gives a visual representation of the problem and find the angles for the last two straight-aways fo the race.

**Homework 7** – Unit Circle

Solve the following triangles using what you know from the unit circle (no calculators, answers should be in exact form). Assume the following triangles to be right.





1. 2.





3. Determine the reference angle for the following angles as well as their sine and cosine values in the unit circle.

a.  b.  c.  d. 

**Homework 8** – Angle Measures

Convert the given angles into radians.

1. a.  b.  c.  c. 

Convert the given angles into degrees.

2. a.  b.  c.  d. 

3. Find the point on the unit circle that corresponds with .

a.  b.  c. 

4. Determine the exact value of each of the six trig functions (if possible) given the following angles.

a.  b.  c. 

5. Determine the exact value of  in radians given the following information.

a.  b.  c. 