

Foundations 20

Unit 5: Oblique Angle Trigonometry

1. What do you think you will learn this unit?

2. What seems familiar about this unit?

3. What is your goal for this unit?

4. What steps will you take to meet this goal?

5. What is your comfort level, at this point, for this unit?

0 1 2 3 4 5

Foundations 20

Unit 5: Oblique Angle Trigonometry

1. What have you learned this unit?

2. Did you meet your goal?

3. If you met your goal, how did you meet it? If you did not meet your goal, what do you need to work on?

4. What did you enjoy about this unit?

5. What did you dislike about this unit?

6. What is your comfort level, at this point, for this unit?

0 1 2 3 4 5

Big Questions

1. How do you draw a diagram based on given information of a triangle?

2. How can you tell if there are no possible triangles?

3. How can you tell if there is one possible triangle?

4. How can you tell if there are two possible triangles?

5. When will there be an ambiguous case?

6. How do you solve a triangle with the ambiguous case?

Unit Summary

Unit 5 – Oblique Triangle Trigonometry

Lesson 1 – Primary Trigonometric Ratios of Oblique Angles

a) Determine if the following is valid or not valid.

$$\cos 25^\circ = -\cos 155^\circ$$

b) Determine two angles between 0° and 180° that have a sine ratio of 0.2545

Lesson 2 – Sine Law with Obtuse Triangles

In triangle ABC: $a = 59.2$, $c = 60.3$ and $\angle A = 74^\circ$ determine the measure of $\angle C$ that is obtuse.

Lesson 3 – Cosine Law with Obtuse Triangles

In triangle ABC: $a = 15.5$, $b = 12$, and $c = 7.9$. Determine the measure of each angle and explain why you must use the cosine law for at least two of the angles.

Lesson 4 – Determining Number of Triangles

In triangle ABC: $\angle A = 74^\circ$, $a = 59.2$ and $c = 60.3$. Determine the number of possible triangles.

Lesson 5 – The Ambiguity Case

Solve any possible triangles in triangle ABC if: $\angle A = 30^\circ$, $a = 8$, $b = 12$.

Lesson 6 – Solving Problems with Obtuse Triangles

One fire ranger station, at A, reports smoke 30 km away in a direction $E30^\circ N$ at point B. A second station, C, due east of the fire station, reports the smoke is 20 km away. To the nearest tenth of a kilometer, determine the distance(s) between the two stations.