Trigonometry Review

***You will be given the following information:***

***a2 + b2 = c2**SOH CAH TOA***

$\frac{a}{\sin(A)}=\frac{b}{\sin(B)}=\frac{c}{\sin(C)}$ $\frac{\sin(A)}{a}=\frac{\sin(B)}{b}=\frac{\sin(C)}{c}$

$a^{2}=b^{2}+c^{2}-2bc\cos(A)$ $\cos(A)=\frac{b^{2}+c^{2}-a^{2}}{2bc}$

Communication in all questions must include:

* Enough steps shown to clearly demonstrate thinking
* Solutions that are neat and easy to follow
* Proper use of mathematical symbols
* Equal signs aligned
* Units used as required
* Concluding statements for all word problems
* Fractions reduced to lowest terms
* Correct rounding.

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1. How do you know when to use SOH CAH TOA? How do you know when to use the Sine Law? How do you know when to use the Cosine Law? Describe in words and given an example.

|  |  |
| --- | --- |
| SOH CAH TOA |  |
| SINE LAW |  |
| COSINE LAW |  |

2. For each triangle below, find the missing side (x) or the missing angle (ϑ) in each diagram. (Include units, round to 1dp)

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| --- | --- |
|  |  |
|  |  |

3. What does it mean to “solve a triangle”?

4. Solve the triangle. Summarize your answers in the chart. (Round to 1 dp)



5. Angle A is between 0ᴼ and 180ᴼ. Determine all measures of angle A in each of the following cases:

|  |  |  |  |
| --- | --- | --- | --- |
| **a)** sin A = 0.2079 | b) cos A = -0.8191 | c) tan A = 1.428  | c) tan A = -2.145  |

6. A bicycle racecourse is shown. What is the angle for the final turn, rounded to the nearest degree?

2.8 km

Start

θ

4.6 km

6.2 km

**WORD PROBLEMS**

Word Problems (answer on a separate piece of paper):

 Draw and label a diagram for each. Round to 1 dp. Remember to write a “therefore” statement at the end.

1. A ladder 10 feet long is leaning against a wall at a 71ᴼ angle. How far from the wall, is the foot of the ladder? How high up the wall does the ladder reach?
2. Billy was making a blueprint of his home, which is triangular. One side of the triangular blueprint is 1.3 meters long. The angles in the triangle at each end of the 1.3m side are 44ᴼ and 101ᴼ. Determine the lengths of the other two sides of the blueprint.
3. A machinist is cutting out a large triangular piece of metal to make a part for a crane. The sides of the piece measure 58 inches, 46 inches, and 62 inches. What are the angles between the sides?
4. A pole is supported by two guy wires, as shown. One wire is attached to the top of the pole and the other is attached at themidpoint.
5. Determine the height of the pole.
6. How far from the base of the pole are the wires anchored?

**More practice: Textbook p. 54 #1, 2, 4, 6, 9, 11, 15, 16a, 19, 20 and 22**

**Trigonometry Flow Chart:**

The angles in any triangle add to 180ᴼ

