

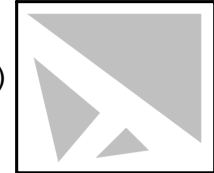
Triggy Situations

Learning Goals

Minds on Math

What do you notice about the triangles?

- think about any characteristics, properties, and/or relationships)
- there are some tools available if you're needing them (desk in centre of classroom)
- post all of your group's ideas on your assigned WB

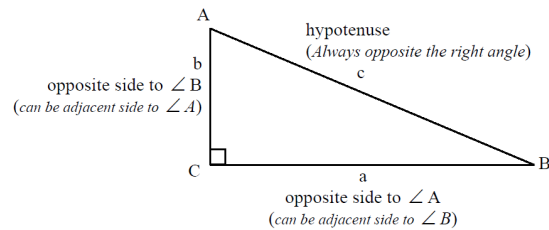


Minds on Math-Summary of Ideas

What do you notice about the triangles?

- think about any characteristics, properties, and/or relationships)

The Primary Trigonometric Ratios



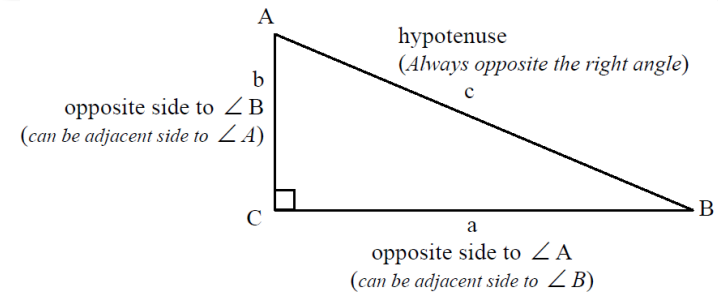
These are the primary trigonometric ratios when we look at $\angle A$:

$$\sin \angle A = \frac{\text{opposite side to } \angle A}{\text{hypotenuse}} = \frac{\text{length of side } a}{\text{length of side } c}$$

$$\cos \angle A = \frac{\text{adjacent side to } \angle A}{\text{hypotenuse}} = \frac{\text{length of side } b}{\text{length of side } c}$$

$$\tan \angle A = \frac{\text{opposite side to } \angle A}{\text{adjacent side to } \angle A} = \frac{\text{length of side } a}{\text{length of side } b}$$

The Primary Trigonometric Ratios (contd.)

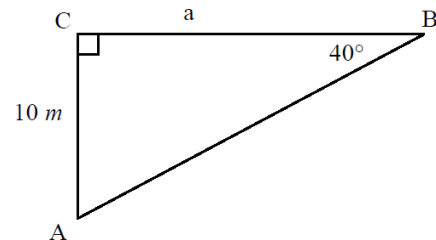


Take note of the differences in the ratios if we use **angle B** as the reference angle:

$$\sin B = \quad \cos B = \quad \tan B =$$

Solving for Missing Side Lengths

E.g., Solve for a .



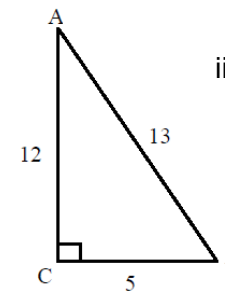
Solving for Missing Angles

E.g., Calculate the measure of each angle...

i) using A as the reference angle

OR

ii) using B as the reference angle



Some Applications

Problem 1: Navigation

Two islands **A** and **B** are 3 km apart. A third island **C** is located due south of **A** and due west of **B**. From island **B** the angle between islands **A** and **C** is 33° . Calculate how far island **C** is from island **A** and from island **B**.

Some Applications

Problem 2: Surveying, Engineering

A construction engineer determines that a straight road must rise vertically 45 m over a 250 m distance measured along the surface of the road (this represents the hypotenuse of the right triangle). Calculate the angle of elevation of the road.

What did you learn today?

Personal:

Reflect upon the learning goals set for today's lesson.

-What were today's goals?

-What do you understand? What do you know how to do?

Supplementary Practice

MBF 3C:

Revisit the Primary Trigonometric Ratios

pp. 14-15 #**5, 9, 10**, 12, 14

Solving Problems Using Trigonometric Ratios

pp. 22-23 #**8, 11, 12**

MAP 4C:

Trigonometric Ratios with Acute Angles

pp. 81-83 #**6, 7, 11**, 14

Trigonometric Ratios with Obtuse Angles

Self-directed, On-line Learning (Video)