Activity 14 — Sin, Cos, and Tan of Right Triangles

Objectives

This activity is designed to help students discover the following relationships:

- ✔ *Sin of an angle is equal to the opposite side/ hypotenuse.*
- ✔ *Cos of an angle is equal to the adjacent side/ hypotenuse.*
- ✔ *Tan of an angle is equal to the opposite side/ adjacent side.*
- ✔ *Relationship between the sin and cos of the acute angles in a right triangle.*
- ✔ *Relationship between the values of the trigonometric functions as the angle increases.*

Vocabulary

vertex	perpendicular
interior angles	opposite side
adjacent side	hypotenuse

Prerequisites

Students must understand how to:

- ✔ *Measure and label segments.*
- ✔ *Measure and label angles.*

Answers

6. The opposite side is the hypotenuse.
9. We do not know which side is adjacent.
12. We do not know which side is adjacent and the opposite side is the hypotenuse.
20. Sin is the opposite side to the hypotenuse.
21. Cos is the adjacent side to the hypotenuse.
22. Tan is the opposite side to the adjacent side.
24. Yes.
25. Yes, the sin of one angle equals the cos of the second angle.
29. The sin gets larger.
30. The cos gets smaller.
31. The tangent gets larger.
32. Yes.

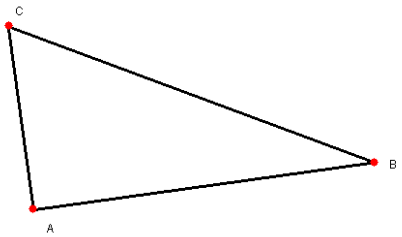

Figure A.10