Trigonometric Functions in the Calculator Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Evaluate each of the following using your calculator (round to the nearest thousandth.
2. sin (62o)
3. cos (132o)
4. tan (-87o)
5. cos (178o)
6. sin (3/7)
7. sin (5/7)
8. cos (9/5)
9. tan (12/7)
10. cos (21/5)
11. sin (225o)
12. tan (90 o)

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Pythagorean Theorem and SOHCAHTOA (find missing sides)

1. Review: Pythagorean Theorem
	1. Pythagorean Theorem is used to find missing sides in a triangle.
	2. “a” and “b” represent the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. “c” represents the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. Examples: Find the missing sides using Pythagorean Theorem
		1.  2.



1. 4.
2. SOHCAHTOA
	1. SOHCAHTOA is used to help find missing sides and angles in a right triangle when Pythagorean Theorem does not work!

**S** (sine) **O** (opposite) **H** (hypotenuse) 🡪

**C** (cosine) **A** (adjacent) **H** (hypotenuse) 🡪

**T** (tangent) **O** (opposite) **A** (adjacent) 🡪

* 1. Setting up Trigonometry Ratios and Solving for Sides
		1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (NOT the right angle)
		2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Opposite, Adjacent, Hypotenuse)
		3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:
			+ \_\_\_\_\_\_\_\_ if we have the opposite and hypotenuse
			+ \_\_\_\_\_\_\_\_ if we have the adjacent and the hypotenuse
			+ \_\_\_\_\_\_\_\_ if we have the opposite and the adjacent
		4. Set up the proportion and solve for x!

|  |  |
| --- | --- |
| Example: |  |
| 1. Select a given angle
 |   |
| 1. Label your sides
 |   |
| 1. Decide which Trig to use
 |   |
| 1. Set up the proportion
 |  |
| 1. Solve the proportion
 |  |
| 1. Check your work!
 |  |

CCMII TEACHER KEY

Unit 5🡪 Lesson 3 🡪 Pythagorean Theorem and SOHCAHTOA (find missing sides)

1. Review: Pythagorean Theorem
	1. Pythagorean Theorem is used to find missing sides in a triangle.

a2 + b2 = c2

* 1. “a” and “b” represent the legs of the triangle
	2. “c” represents the hypotenuse
	3. Examples: Find the missing sides using Pythagorean Theorem
		1. $3\sqrt{5}$ 2. $\sqrt{58}$



1. 7.5 4. $5\sqrt{2}$
2. SOHCAHTOA
	1. SOHCAHTOA is used to help find missing sides and angles in a right triangle when Pythagorean Theorem does not work!

SOH

**S** (sine) **O** (opposite) **H** (hypotenuse) 🡪

CAH

**C** (cosine) **A** (adjacent) **H** (hypotenuse) 🡪

TOA

**T** (tangent) **O** (opposite) **A** (adjacent) 🡪

* 1. Setting up Trigonometry Ratios and Solving for Sides
		1. Select a given angle (NOT the right angle)
		2. Label your sides (Opposite, Adjacent, Hypotenuse)
		3. Decide which trig function you can use:
			+ SOH if we have the opposite and hypotenuse
			+ CAH if we have the adjacent and the hypotenuse
			+ TOA if we have the opposite and the adjacent
		4. Set up the proportion and solve for x!

|  |  |
| --- | --- |
| Example: |  |
| 1. Select a given angle
 |  Opp |
| 1. Label your sides
 |  Hyp |
| 1. Decide which Trig to use
 |   Opp and Hyp 🡪 SOH |
| 1. Set up the proportion
 |  $\sin(\left(60\right))= \frac{x}{17}$ |
| 1. Solve the proportion
 |  x = sin (60) \*17 = **14.7** |
| 1. Check your work!
 |  |