**8.1 Right Triangle Trig (G.SRT.6)**

**Pythagorean Theorem:**

**Trigonometry –**

|  |  |
| --- | --- |
| http://perezhortinelafamily.us/wp-content/uploads/2011/02/Right-Triangle.jpg | **Trig Ratios: SOHCAHTOA****sine**  **cosecant****cosine secant****tangent cotangent** |

**Identify the six trig ratios for the triangles in the examples below:**

|  |  |
| --- | --- |
| **Example 1:** | **Example 2:** |

**Use a calculator to find each value.**

|  |  |  |
| --- | --- | --- |
| Ex. 3) $\sin(\left(9°\right))$ | Ex. 4) $\cos(\left(37°\right))$ | Ex. 5) $\tan(\left(48°\right))$ |

**8.2 Solving a Triangle**

**We can use the inverse trig functions to find the measure of an angle.**

|  |  |  |
| --- | --- | --- |
| **a.** $sin^{-1}(0.5)$ | **b.** $cos^{-1}(0.86)$ | **c.** $tan^{-1}(6)$ |

**Write an equation using the different trig functions to solve for x.**

**Find the measure of each side indicated. Round to the nearest tenth.**

|  |  |
| --- | --- |
| **Example 1:** | **Example 2:** |

**Find the measure of each angle indicated. Round to the nearest tenth.**

|  |  |
| --- | --- |
| **Example 3:** | **Example 4:**  |

**Solve each triangle. Round answers to the nearest tenth.**

**Example 5:**

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**8.3 Angles of Elevation and Depression (G.SRT.8, pg 286)**

Vocab:

|  |  |
| --- | --- |
| **Angle of Elevation:****Angle of Depression:** |  |

**\*Hint: Drawing a picture will help to set up the triangles.**

Example 1

You are standing 196 feet from the base of an office building in downtown Salt Lake City. The angle of elevation to the top of the building is 65$°$ Find the height of the building.

Example 2

John is standing on the roof of a building that is 300 feet tall and sees Sarah standing on the ground. If the angle of depression is 60$°$ how far away is Sarah from John?

Example 3

A kite has 25 feet of string. The wind is blowing the kite to the west so that the angle of elevation is 40$°$. How far has the kite traveled horizontally?

Example 4

A sledding run is 400 yards long with a vertical drop of 40.2 yards. Find the angle of depression of the run.