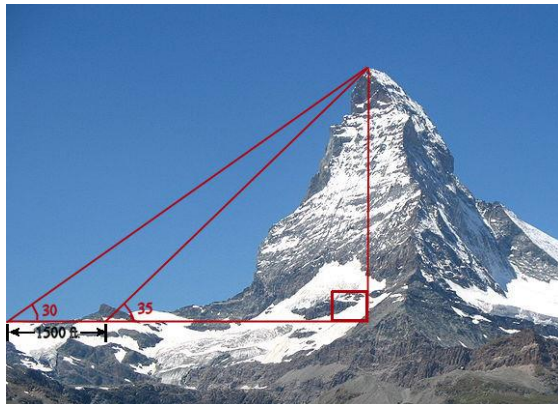Distance formula: The distance formula is used to determine the distance (d) between two points. If the coordinates of the two points are (x1 , y2) and (x2 , y2) the distance equals the square root of x2-x1 squared plus y2-y1 squared.

Pythagorean Theorem: A theorem in geometry: the square of the length of the hypotenuse of a right triangle equals the sum of the squares of the lengths of the other two sides.

Midpoint: the exact middle point.

Real Life Problems:

Distance formula:

A real life problem for distance formula would be the cliff of a mountain. To find the distance from the bottom to the cliff of the mountain you find the coodinates and plug it in the formula which is the square root of (x2-x1),(y2-y1). This is important in real life because this formula will give you the exact distance of whatever you are trying to find.
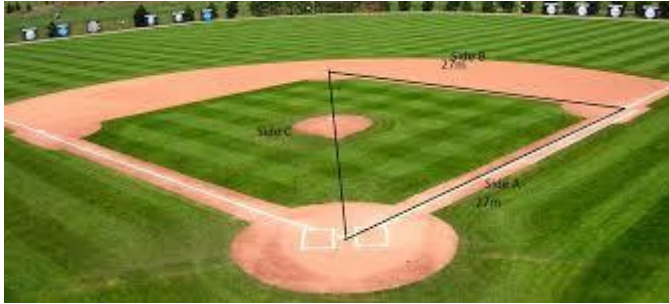
Pythagorean theorem: A real life problem using the Pythagorean theorem is in a baseball field. Side A and side B would be the two sides and side C would be the hypotenuse. You will then use the formula which is a squared + b squared = c squared. Using the baseball field you will do (side A) squared + (side B) squared = (side C) squared.
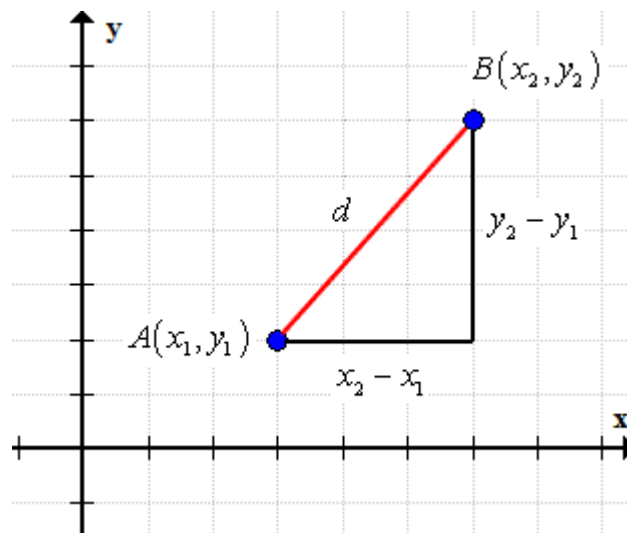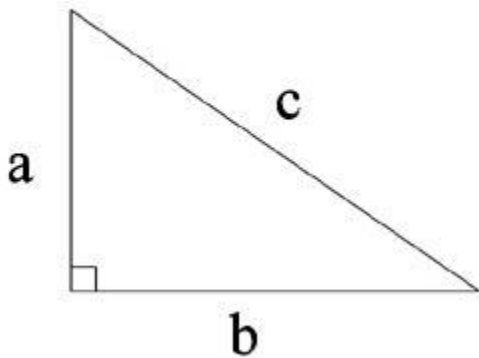
Midpoint:

A real life problem for midpoint is a ferris wheel because the distance from the middle of the ferris wheel to any side is the same making the middle the midpoint. This is important in real life because contruction workers often use this material to calculate the midpoint.
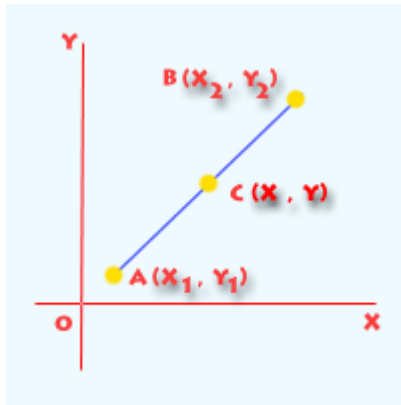
Diagrams:

pythagorean theorem:

$$a^2 + b^2 = c^2$$

Distance:

Midpoint: