1. To determine the distance between two points, A and B, a surveyor chooses a point C that is 308 yards from A and 590 yards from B. If $∠BAC $is 49$°$30’, approximate the distance between A and B.
2. Find ||a|| if a = -(4, -8).
3. The volume V of the right triangular pyramid shown in the figure is $\frac{1}{3} Bh, $where B is the area of the base and h is the height of the pyramid. Approximate h, if d = 15.



1. An airplane flies 165 miles from point A in the direction 130$°$ and then travels in the direction 245$°$ for 75 miles. Approximately how far is the airplane from A?
2. Find the smallest positive angle θ from the positive x-axis to the vector OP that corresponds to

**a** if **a** = (2, -2).

1. The magnitudes and directions of two forces acting at a point P are given. Approximate the direction of the resultant vector.
2. 9.0 lbs, 150$°$
3. 3.0 lbs, 195$°$
4. Two tugboats are towing a large ship into port, as shown in the figure. The larger tug exerts a force of 3,700 pounds on its cable, and the smaller tug exerts a force of 2,600 pounds on its cable. If the ship is to travel on a straight line l, approximate the angle θ that the larger tub must make with l.

