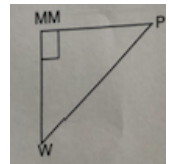


Draw a diagram and show working out for each of the following problems. Solve correct for two decimal places.

1. A balloon is tethered to the ground by a string 5 m long. If the string makes an angle of 65 degrees with the ground, how high above ground is the balloon?
2. A power pole 6 m high is to have a wire attached to the top of the pole making an angle of 22 degrees and extending to the ground. How long must the wire be?
3. A company wants to build a wheelchair ramp from the footpath to the entrance foyer of the building which is 1.5 m above street level. The horizontal distance from the footpath to the front is 15m. If the inclination of the ramp must be no more than 6 degrees is there enough room to build the ramp?
4. The angle of elevation to the top of the building from the point on the ground 36 meters away is 42 degrees. What is the height of the building?
5. The angle of the depression from top of a cliff 50 meters above sea level to a ship is sailing off the cliff at 22 degrees. How far is the yacht from the base of the cliff.

6. Parktown is 300km due east of Mt Morgan, while Woodvale is 475 km due south of Mt. Morgan. What course should a pilot set to fly direct from Woodvale to Parktown?



7. On a popular walking track camp site A is 9km west of camp site B on the opposite side of a lake. To reach camp site B on foot hikers must travel 12 km due south before they are able to head towards camp site B. What bearings must they take?

