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Right Triangle Trigonometry Application Worksheet

1. A boy flying a kite lets out 300 feet of string which makes an angle of 38° with the ground. How high above the ground is the kite?
2. An airplane climbs at an angle of 11° with the ground. Find the ground distance it has travelled when it has attained an altitude of 400 feet.
3. A 25-foot ladder leans against a building. The ladder’s base is 13.5 feet from the building. Find the angle the ladder makes with the ground.
4. A ladder leaning against the wall makes an angle of 74° with the ground. If the foot of the ladder is 6.5 feet from the wall, how high on the wall is the ladder?
5. In order to reach the top of a hill which is 250 feet high, one must travel 2000 feet straight up a road which leads to the top. Find the number of degrees contained in the angle which the road makes with the horizontal.
6. Henry is flying a kite. The kite string makes an angle of 43° with the ground. If Henry is standing 100 feet from a point on the ground directly below the kite, find the length of the kite string.
7. A ladder leans against a building. The top of the ladder reaches a point on the building which is 18 feet above the ground. The foot of the ladder is 7 feet from the building. Find the measure of the angle which the ladder makes with the ground.
8. A straight road to the top of a hill is 2500 feet long and makes an angle of 12° with the horizontal line. Find the height of the hill.
9. A wire attached to the top of a 20-foot pole reaches a stake in the ground and makes an angle of 58° with the ground. Find the length of the wire.
10. An astronaut is looking at Earth which has a radius of 3,959 miles. When the astronaut is on the moon, which is 229,582 miles away from the center of the earth, his line of sight forms two tangents. Find the measure of the central angle in the right triangle.

