

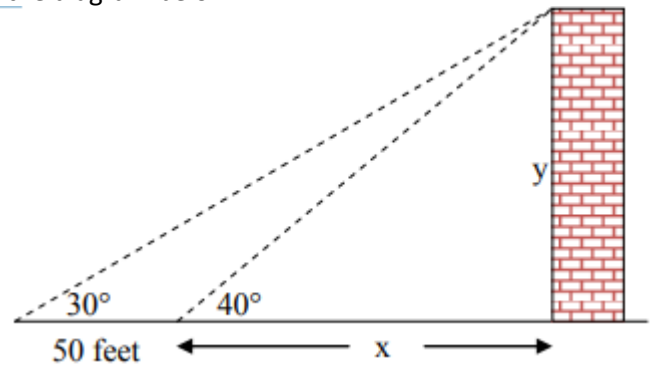
Name: _____ Per: _____ Date: _____

Right Triangle Trigonometry Challenge Problems

1. A person starts out 17 miles from the base of a tall mountain, and looks up at a 4° angle of elevation to the top of the mountain. When they move 12 miles closer to the base of the mountain, what will be their angle of elevation when they look to the top? Answer to the nearest degree.

2. A pilot maintains an altitude of 25,000 feet over level ground. The pilot observes a crater on the ground at an angle of depression of 5° . If the plane continues for 16 more miles, what will be the angle of depression to the crater? Answer to the nearest degree.

3. An observer on the ground looks up to the top of a building at an angle of elevation of 30° . After moving 50 feet closer, the angle of elevation is now 40° . Consider the diagram below:



4. Two observers (located at points A and B in the diagram) are watching a climber on the opposite face of a chasm. The chasm is 81 feet wide. When observer A looks down to the bottom of the opposite wall of the chasm, he must look down at an angle of depression of 51° . However, observer A sees the climber at an angle of depression of 20° . Observer B will see the climber at what angle of elevation?

