4.8 Applications and Models

Name: Date: June 26, 2013

P 19. The sun is 25° above the horizon. Find the length of a shadow cast by a building that is 100 feet tall.

P 21. A ladder 20 feet long leans against the side of a house. Find the height from the top of the ladder to the ground if the angle of elevation of the ladder is 80°.

P 22. The length of a shadow of a tree is 125 feet when the angle of elevation of the sun is 33°. Approximate the height of the tree.

P 23. From a point 50 feet in front of a church, the angles of elevation to the base of the steeple and the top of the steeple are 35° and 47°, respectively. Find the height of the steeple.

P 43. Find the acute angle between the two lines

$$\begin{aligned} L_1 : 3x - 2y &= 5 \\ L_2 : \ x + y &= 1 \end{aligned}$$