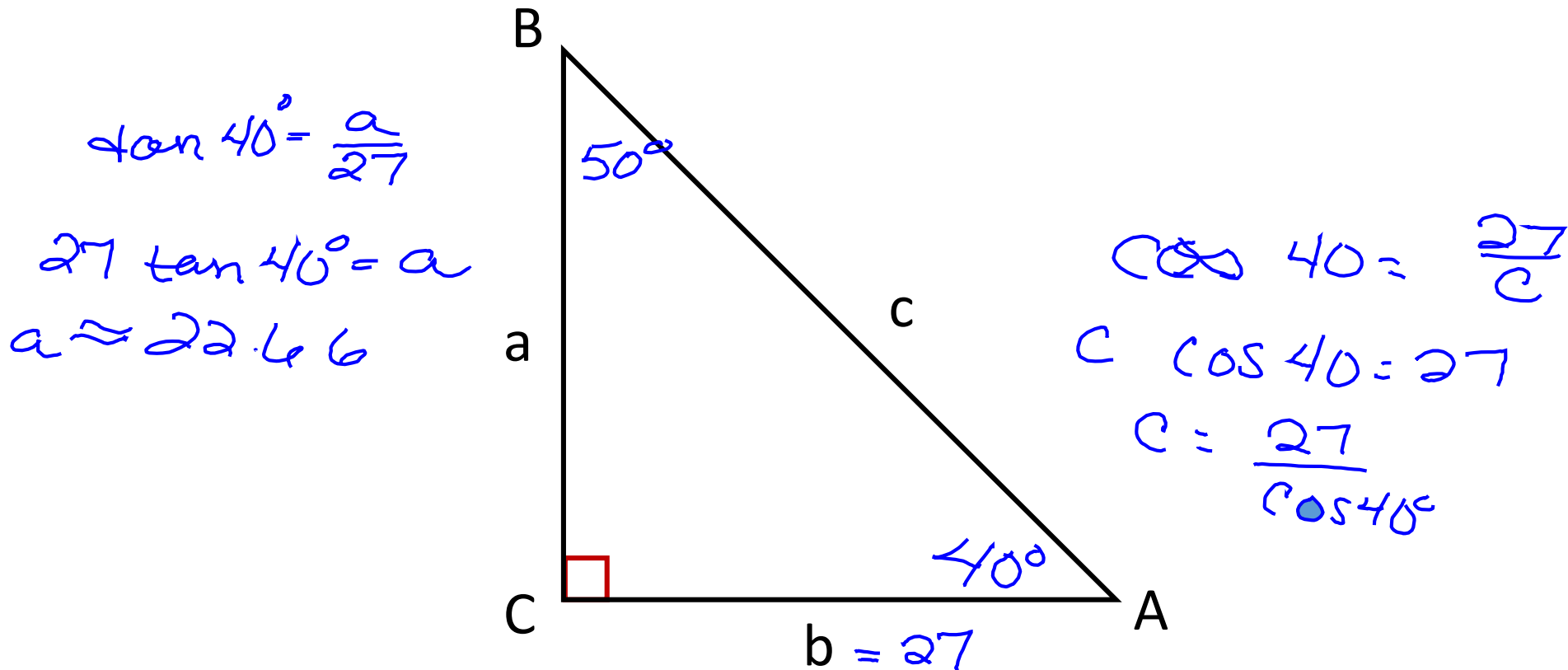


Applications and Models

Section 4.8

Solve the right triangle shown where $A = 40^\circ$ and $b = 27$. Round to two decimal places.



Find the height of the kite if the all 50 feet of the string is out, the height of the boy's hand is 3 feet and the angle of elevation is 34° .

$$\begin{aligned}\sin 34 &= \frac{h}{50} \\ 50 \sin 34 &= h \\ &+ 3 \\ 27.96 &+ 3 \\ 30.96 \text{ ft}\end{aligned}$$

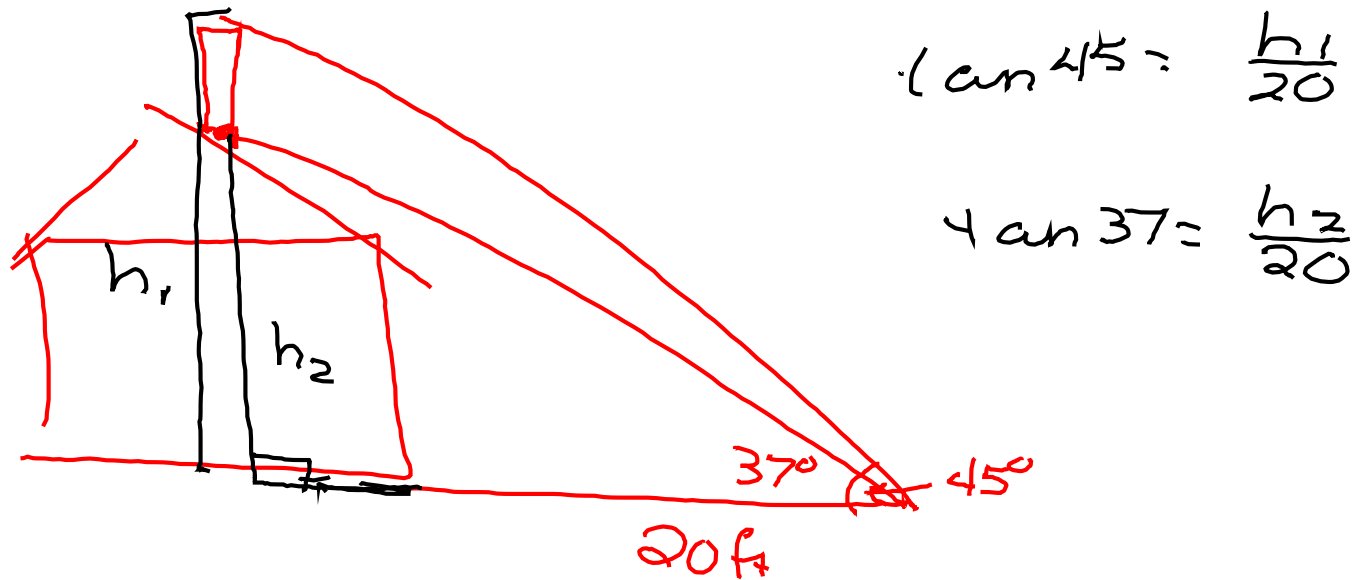


A ladder 10 feet long leans against the side of a house. Find the height h from the top of the ladder to the ground if the angle of elevation of the ladder is 69° .

$$\sin 69 = \frac{h}{10}$$



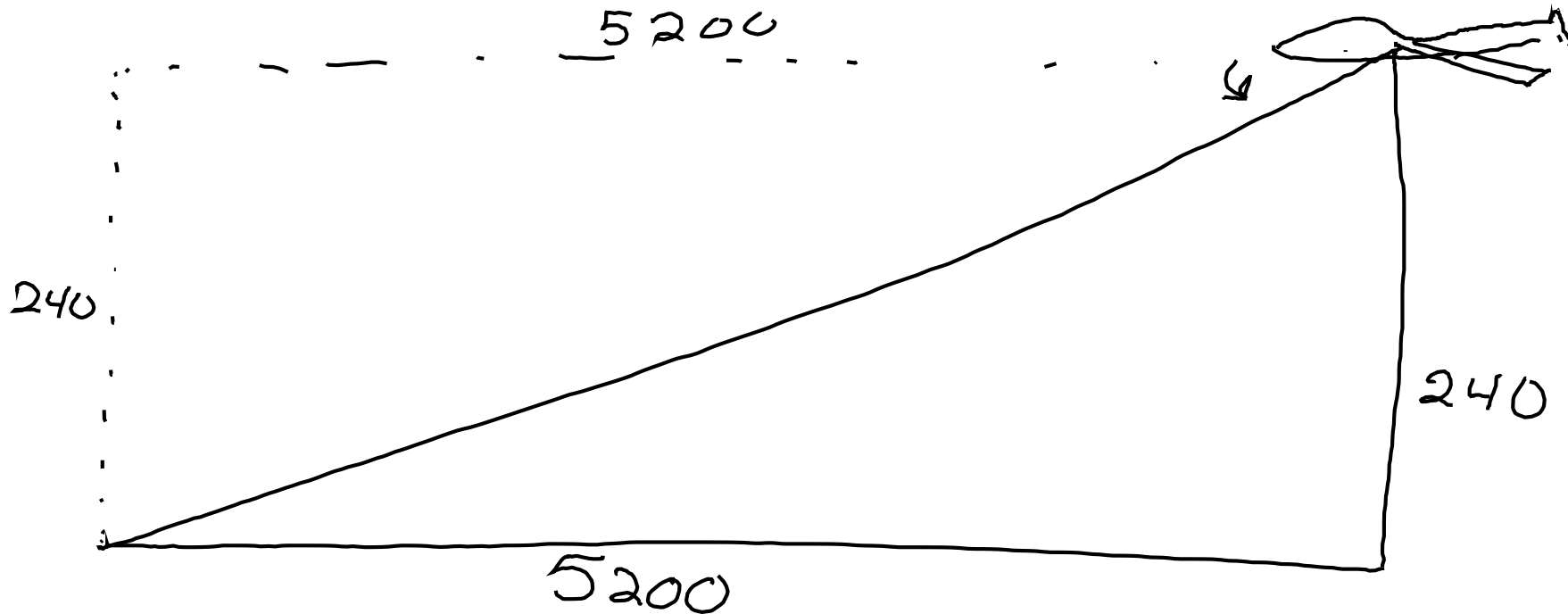
From a point 20 feet in front of a house, the angles of elevation to the base of the chimney and the top of the chimney are 37° and 45° respectively. Find the height of the chimney.



From the time a small airplane is 240 feet high and 5200 ground feet from its landing runway, the plane descends in a straight line to the runway. Determine the plane's angle of descent.

$$\tan \theta = \frac{240}{5200}$$

$$= \tan^{-1}(\text{ans})$$



$$2.63^\circ$$

Section 4.8 p.336; 9, 19, 21, 25-29 odd