RIGHT TRIANGLES: APPS

TEXT: 3.4

LAST NAME	FIRST NAME	DATE

1 (3 points). Find the angle of inclination of each line. You may round your answers to 3 significant digits.

(a) $y = \frac{2}{9}x - 29$

(b) $y = 15 - 1.7x$

(c) $2x + 11y - 90 = 0$

(d) $x - 2(12 - y) = 2y - 24$

2 (1 point)**.** Find an equation of the line passing through the point $(-7, 8)$ with the angle of inclination $\alpha = 59^\circ$. Leave your answer in the point-slope form, round coefficients to 3 significant digits.

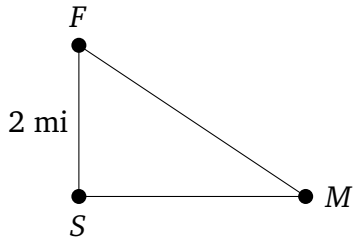
3 (1 point)**.** Find an equation of the line passing through the point $(2, -13)$ with the angle of inclination $\alpha = 144^\circ$. Leave your answer in the slope-intercept form, round coefficients to 3 significant digits.

4 (2 points)**.** The *View Boston* observation deck at the Prudential Tower in Boston, Massachusetts is 750 feet above the ground. From that vantage point, the angle of depression towards the Fenway Park is 10°. How far is the Fenway Park from the Prudential Tower?

Make a sketch for this problem, round your answer to 4 significant digits.

5 (2 points)**.** A park ranger measures the angle of elevation to the top of the mountain M from a certain point S several miles away, and finds it to be 24°. Then the ranger turns 90° and walks for 2 miles on a straight flat path. From this new point F, the ranger measures the angle F between the path just walked and the path towards the base of the mountain, which turns out to be 63°. How tall is the mountain?

Make a 3D sketch for this problem, round your answer to 4 significant digits.



View from above