

# Homefun 16

## Trig or Treat? Trig AND Treat!

MATH 150  
10 points

**Directions:** Work in groups of 2 to 4 in class and then finish outside of class as necessary. Each group should submit **ONE** solution page for the group. (Be sure everyone's name is on it!)

1. Before felling a tree, a logger wants to determine its height. The logger paces 40 feet from the base of the tree and then, using surveying equipment, determines that the angle up to the top of the tree is  $78^\circ$ . How tall is the tree? [Ans: 188.2 ft]
2. According to the Americans with Disabilities Act (ADA), the maximum slope of a ramp is  $\frac{1}{12}$ .<sup>1</sup> If  $\theta$  represents the angle of rise for this slope, what are  $\cos \theta$  and  $\sin \theta$ ? [Ans:  $12/\sqrt{145}$ ,  $1/\sqrt{145}$ ]

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<sup>1</sup><https://www.ada.gov/reg3a.html#anchor16>