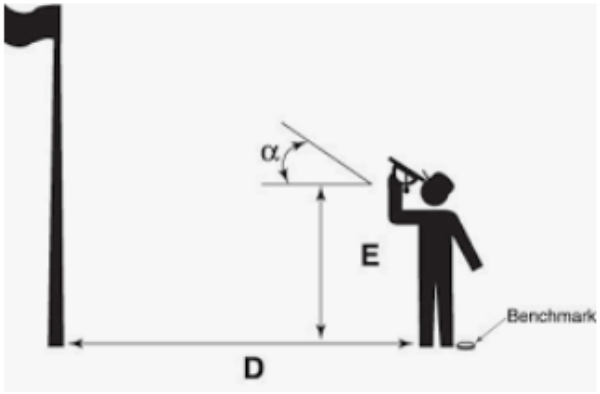
Name: _____

Period: _____

Common Core Standard

HSG-SRT.C.8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems

Trigonometry Three-Level Challenge Level III Retake



The diagram above illustrates Angel who is observing a flagpole from D meters away and α is the angle of elevation. Answer the following questions by calculating all length measurements to the nearest tenth of a unit. Show all detailed calculations to earn full credit.

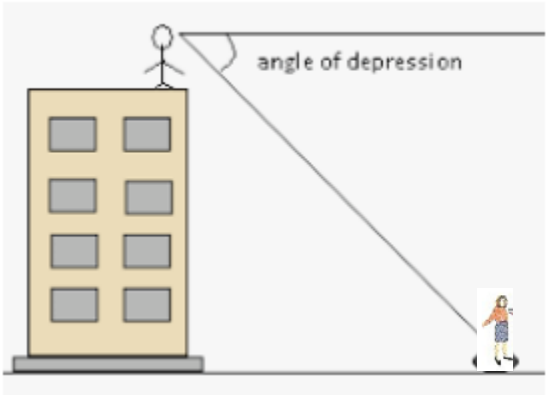
1. Angel's eye level height is 1. 8 meters and he is standing 5 meters away from the flagpole. Find the height of the pole when the angle of elevation α is $35°$. 1. _____

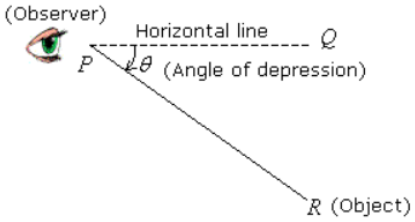
2. Calculate the new angle of elevation after he walked the 1.2 meters towards the pole. 2. _____

3. Find the distance from the point where he is now standing to the top of the pole. 3. _____

4. When the angle of elevation changes from $35° \; to \; 50°$, how much closer is he from the original 5 meters where she started? 4. _____

(Back)





5. Chris is standing at the top of a building looking at his girlfriend Naylene on the ground, who is standing 100 feet away from the base of the building. If the building is 90 feet high and the angle of depression θ is 43.7°, how high is Chris's eye level? Show all detailed calculations to earn full credit.

5. _____