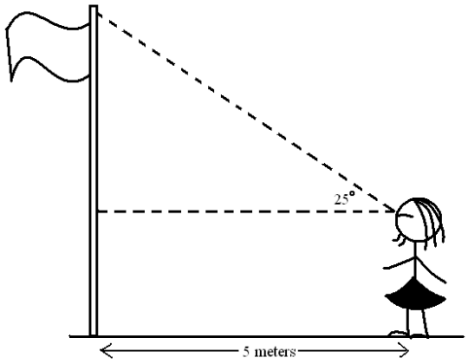
Name: _____

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



The diagram above illustrates Nataly who is observing a flagpole from 5 meters away. Answer the following questions by calculating all length measurements to the nearest tenth of a unit. Show all detailed calculations to earn full credit.

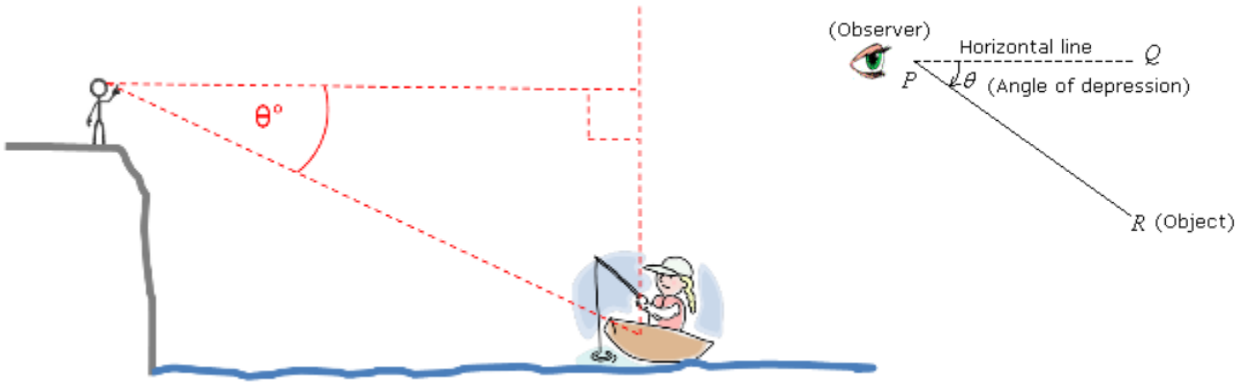
1. Nataly's eye level height is 1. 2 meters and she is standing 5 meters away from a flagpole. Find the height of the pole when the angle of elevation is 25 degrees. 1. _____

2. Calculate the new angle of elevation after she walked the 1.6 meters towards the pole. 2. _____

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

4. When the angle of elevation changes from $25° \; to \; 40°$, how much closer is she from the original 5 meters where she started? 4. _____

(Back)



5. Matthew is standing at the top of a cliff overlooking the sea where his girlfriend Jazlyn is fishing on a boat that is 100 feet away from the base of the cliff. If the cliff is 50 feet high and the angle of depression θ is 29.2°, how high is Matthew's eye level? Show all detailed calculations to earn full credit.

5. _____