Cynthia A Duncan
Dr. Virgil G. Fredenberg
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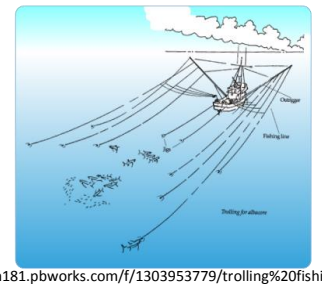
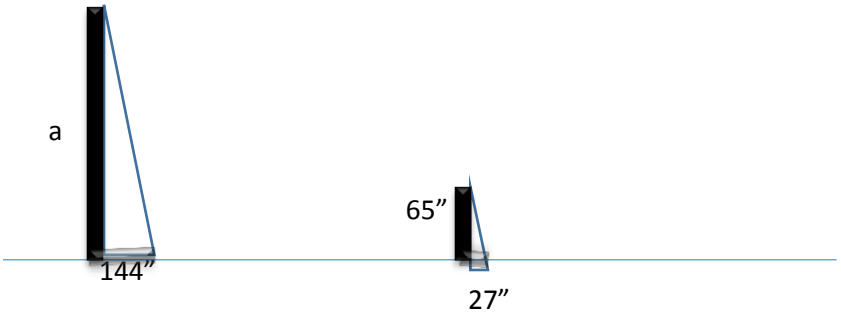


http://comm181.pbworks.com/f/1303953779/trolling%20fishing_pic.png

Similar Triangles

Sitka Sound is full of boats trolling for salmon. Trolling poles on commercial trollers play an important role. Imagine you are replacing one of your trolling poles. You know you want the pole to be 30 ft. high. The pole when standing up right has a shadow 12 feet long. When you stand your 5'5ft body next to the pole you have a shadow of 2'3 ft. Is the trolling pole the correct height? Prove your answer.

Sample Work



The first thing I did was convert lengths to inches. Because the triangles are similar (same angles) we can compare the triangles. We can find the ratio of one triangles legs and apply it to the other. In this case, yes, the troll pole is 30 ft high.

$$\frac{65"}{27"} = \frac{a}{144"} \qquad 2.5\,(144") = a \qquad a = 360" = 30 \text{ ft.}$$