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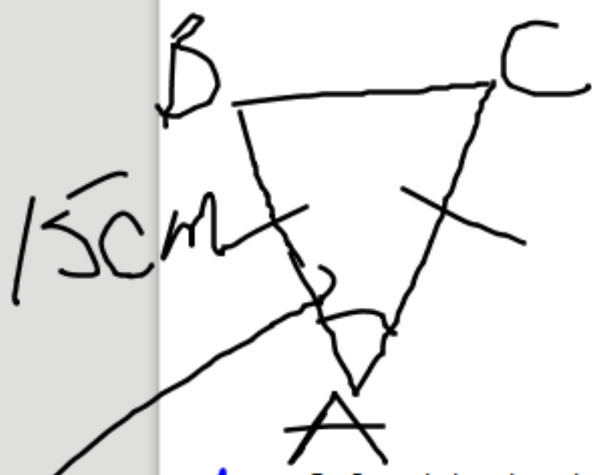
4. A funnel used to pour oil into an engine is in the shape of a cone. The sides of the cone are 15 cm long and the angle between the sides is 17.9°. What is the diameter of the cone?

$a^2 = b^2 + c^2 - 2bc(\cos A)$



$A = 17.9°$

$B = \quad b = 15cm$

$C = \quad c = 15cm$

$a \approx 4.7cm$

5. Jesse is in a hot air balloon 6500 m above a lake. She measures the angle of depression to the far side of a lake to be 32° and the angle of depression to the near side of the lake to be 45°. Determine the distance across the lake.

SOHCAHTOA

$\tan 32^\circ = \frac{O}{A}$

$\tan 32^\circ = \frac{6500}{x}$

$A = 103^\circ$

$\tan 45^\circ = \frac{O}{A}$

$\tan 45^\circ = \frac{6500}{y}$

6. A hydro pole on the side of a hill casts a 36 m long shadow up the hill. The hill has a 13° angle of elevation to the horizontal and the sun has an angle of elevation of 43°. How tall is the hydro pole?

$10,402 + 6500 \quad x + y \quad 16,902m$

6. A hydro pole on the side of a hill casts a 36 m long shadow up the hill. The hill has a 13° angle of elevation to the horizontal and the sun has an angle of elevation of 43°. How tall is the hydro pole?

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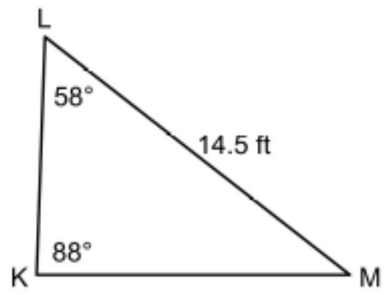

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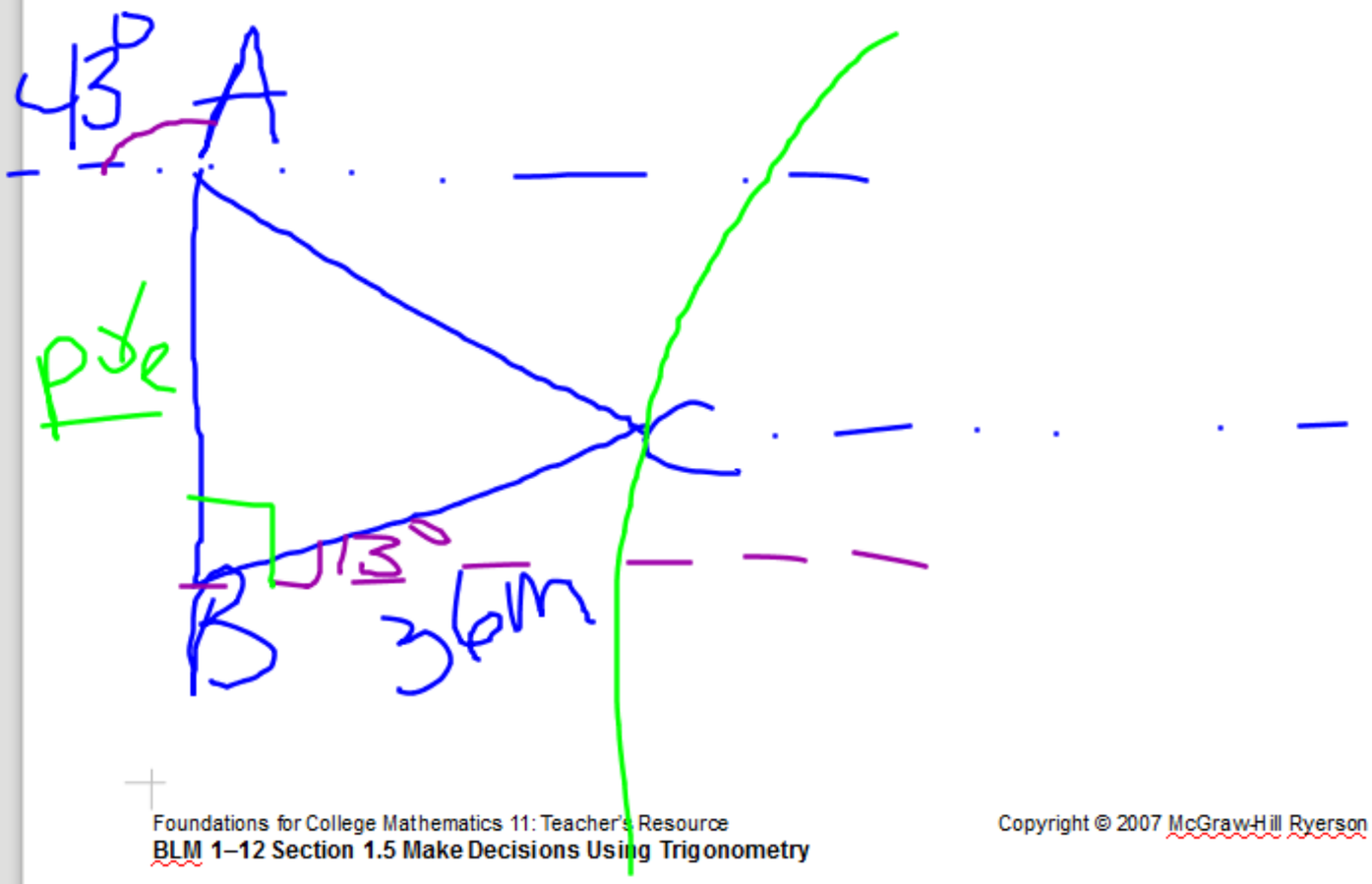
Determine the distance across the lake.

6. A hydro pole on the side of a hill casts a 36 m long shadow up the hill. The hill has a 13° angle of elevation to the horizontal and the sun has an angle of elevation of 43°. How tall is the hydro pole?



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