

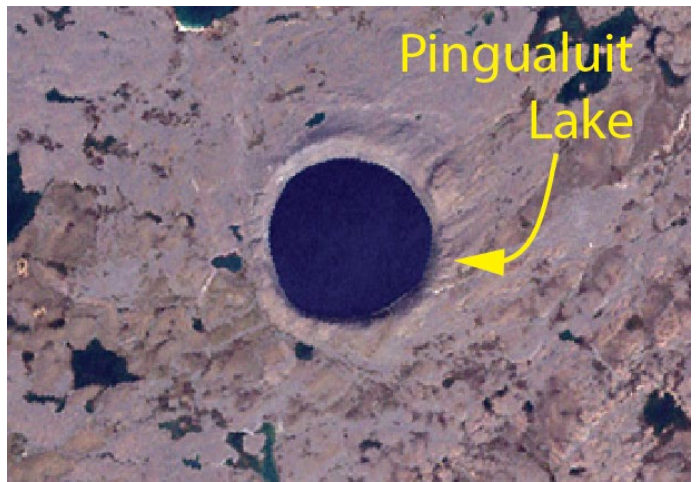
Grade 7: Lake Pingualuit

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7.G.B.4 - Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

Pingualuit Lake in Canada holds some of the purest fresh water in the world. The distance around the lake is approximately 11 km.

A biologist rowed straight across the lake, passing near the center.



About how far did the biologist row? Select the best estimate.

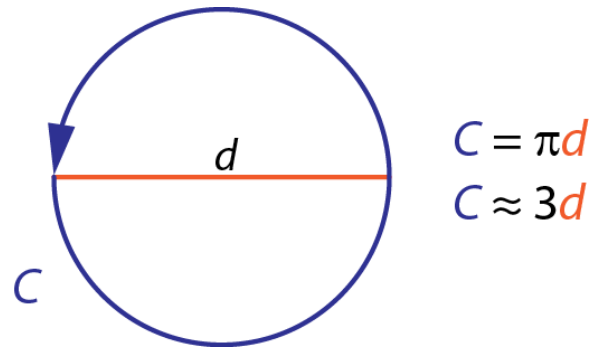
- The biologist rowed about **2 km**.
- The biologist rowed about **4 km**.
- The biologist rowed about **6 km**.
- The biologist rowed about **33 km**.

Solution

Correct if student selects 4 km.

This is an estimation problem because the lake isn't exactly circular. The second option, "The biologist rowed about 4 km," is a fair estimate—the best estimate by far among the available choices.

To arrive at this estimate, one can apply the knowledge that a circle is about three times as far around as it is wide (see the figure at right).



The lake is about 11 km around. The distance across the lake is about a third of that, or in rough numbers about 4 km.

If students have trouble with this problem, you might draw the lake for them on a piece of paper and explain the problem. Students may have learned the formula $C = \pi d$ without absorbing its intuitive meaning.

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Name: _____

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About how far did the biologist row? Select the best estimate.

- The biologist rowed about 2 km.
- The biologist rowed about 4 km.
- The biologist rowed about 6 km.
- The biologist rowed about 33 km.