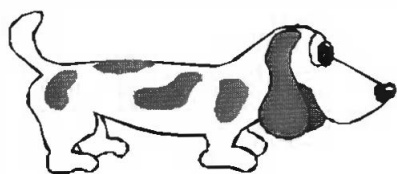


# A Page of Problems

A Craig Loewen

## High School

A dog is tied outside with a 50 m rope at the corner of a 25 m square building. What is the size of the area the dog can reach?



By how much does the area increase if the dog is given a 60 m rope?

Adapted from Kantecki, C, and L E Yunker. 1982. "Problem Solving for the High School Mathematics Student." *Math Monograph* 7: 49-60.

## Middle School

Students in a physical education class are spaced evenly around a circle, and then they count off. Student 15 is directly opposite student 49. How many students are in the class?



*Mathematics Teacher* 83, no 4: 290-91.

## Junior High

You have only one 5-litre container and one 3-litre container. How can you measure out exactly 4 litres of water if neither container is marked for measuring?

Find strategies to measure out any number of litres of water from 1 to 20.



Billstein, R. S Libeskind and J W Lott. 1987. *A Problem Solving Approach to Mathematics for Elementary School Teachers*. 3rd ed. Menlo Park, Cal: Benjamin/Cummings.

## Elementary

A frog fell into a well that was 20 metres deep. Each day he climbed 3 metres up the well's sides. At night he slid back down 1 metre. How many days did it take him to climb out of the well?



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