

# SCHOLASTIC (familial) MATH LEAGUE 2019/2020

Math problems for primary school grades 5 and 6

Set 6 /deadline March 26, 2020 /

## Problem 1

The trapezoidal diagonal has a length of 24 and forms a  $45^\circ$  angle with the each of the bases of the trapezoid. Half the sum of the trapezoidal base lengths is equal to the length of the trapezoidal height. Calculate the surface area of this trapezoid.

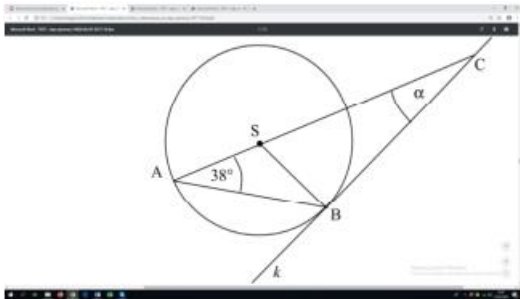
## Problem 2

250 hand-painted Christmas baubles were brought to the store. The sale price was set at \$12 each. After having sold 0.2 of all of the baubles, it was noticed that some of them had broken during transport. The cracked baubles were put away. To obtain the planned income, the remaining ones were sold for \$16 each. How many baubles were cracked?

## Problem 3

To prepare dry mortar for plastering walls, you need to mix sand, lime and cement in a ratio of 15: 4: 1, respectively. Calculate how much lime should be used to make 420 kg of this mortar?

## Problem 4



Given is the circle with the center at point S. Knowing that the straight line k is tangent to the circle at point B, calculate the angle  $\alpha$ .

## Problem 5

Kate and Tom receive allowance from their parents every month. Kate receives \$60, and her older brother Tom \$75. What percentage of Kate's allowance is Tom's allowance?