

## 2013 John O'Bryan Mathematical Competition

1. Let  $k$  be the number of distinct diagonals that can be drawn in a dodecagon. Let  $w$  be the numeric value of the average degree measure of an exterior angle of a dodecagon. Find the value of  $(k + w)$ .

2. Let  $A$  represent the smallest product of two real numbers whose difference is 6. Let  $B$  represent the

largest value of  $y$  such that  $y = -|x + 6| + 3$  where  $x$  is a real number. Find the value of the product  $AB$ .

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Answers for the Two-Person Speed Event

Note: All answers must be written legibly and in simplest form. Exact answers are to be given unless