

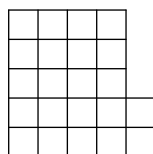
Turkey Junior National Olympiad 2002

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by xeroxia

- 1 Let $ABCD$ be a trapezoid such that $|AC| = 8$, $|BD| = 6$, and $AD \parallel BC$. Let P and S be the midpoints of $[AD]$ and $[BC]$, respectively. If $|PS| = 5$, find the area of the trapezoid $ABCD$.

2



We are dividing the above figure into parts with shapes:



After that division, find the number of



shaped parts.

- 3 Find all ordered positive integer pairs of (m, n) such that $2^n - 1$ divides $2^m + 1$.