Problem 1. In a barn with chickens and dogs there are 5 heads and 14 legs. How many chickens are there? (A chicken has 2 legs and a dog has 4.)
Problem 2. Several logs are cut into 16 pieces by making a total of 10 cuts (every time only one log is cut). How many logs were there?
Problem 3. Ted drives to Atlanta at 60 mph and returns at 30 mph. What was his average speed for the round trip, in mph?
Problem 4. Express $\sqrt{3} - 4i$ in the form $a+bi$ with $a > 0$. (Here, $i = \sqrt{-1}$.)
Problem 5. In the alphabet of the Mumbo-Jumbo tribe there are 3 letters. A word is any sequence of these letters which is 4 letters or shorter. How many words are there in the language of Mumbo-Jumbo?
Problem 6. Point $P$ is inside rectangle $ABCD$. In sq. units, the areas of $\triangle APB$, $\triangle APD$, and $\triangle CPD$ are 7, 6, and 2, respectively. Find the area of $\triangle BPC$. 

\[
\begin{array}{c}
\text{D} \\
\text{P} \\
\text{A} \\
\text{B} \\
\text{C} \\
\text{2} \\
\text{6} \\
\text{7} \\
\text{?}
\end{array}
\]
Problem 7. How many 6-digit numbers are divisible by 5?
Problem 8. Point $P$ is inside rectangle $ABCD$. $AP = 6$, $DP = 2$, and $CP = 7$. Find $BP$. 
Problem 9. How many zeros are at the end of the base three decimal for $27!$?
Problem 10. What is the smallest integer $n > 2$ for which the fraction
\[
\frac{n - 2}{n^2 + 13}
\]
is not in lowest terms?