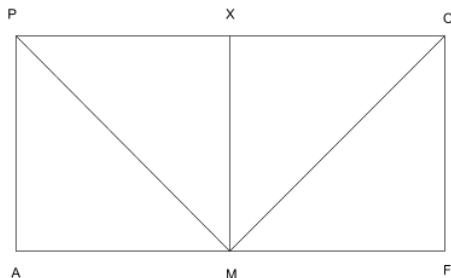


**Gauss School and Gauss Math Circle**  
**2020 Gauss Math Tournament**  
**Division I (Target Round 20 minutes, 8 Questions)**

1. What is the smallest positive integer divisible by the three smallest prime numbers?
2. Pofos are a magical and mystical (and made-up) species of sheep. In a herd of pofos there are always three leaders. If there are seven herds in an empire, how many leaders are there in two empires?
3. If a 😊 $b=ab+a+b+1$ , then what is  $2 😊22$ ?
4. Brawrm, the Daring Pofo, is trying to reach his hometown of Fralyud and there are multiple paths he can take. If Pofo the Brave starts at the bottom-left corner of the grid below and Fralyud is the top-right corner, then how many paths can he take to get back to his hometown? Brawrm cannot retrace his steps and can only move up and to the right, following the gridlines.



5. What is the area of a circle with diameter 6?
6. Pofos love waffles. If waffles cost one dollar each, then what is the greatest number of waffles Taf the Hungry Pofo can buy with one \$10 bill, three \$5 bills, seven quarters, and five dimes?
7. In the rectangle POFA, PAMX and XOFM are squares. If  $AF=12$ , what is the area of triangle POM?



8. Three pofos are in a waffle shop. How many ways are there for the pofos to line up, if one of the pofos, Taredred, hasn't thought of his order yet and can't be first in line?