



Math Olympiad and Problem Solving Programs

E220 - Intermediate Math Competitions

Problem Set 1.2 - Mathcounts Warm-Up 1 2008-2009

Name:

Date:

1.
2.
3.
4. First, find the prime factorization of 1000: $2^3 \times 5^3$. Now factor $20 = 2^2 \times 5$ out of the prime factorization: $20(2 \times 5^2)$. Now find how many factors the number in the parenthesis has. The exponents are 1 and 2 (because 2 is raised to 1 and 5 is raised to 2). Then add 1 to each exponent: $1 + 1 = 2$, $2 + 1 = 3$. Then multiply these new numbers together: $2 \times 3 = 6$. There are factors.
5. The square has perimeter 144, so the side of the square is $144 \div 4 = 36$ units. If the side of the triangle is split into four equal parts, then each of these fourths is $36 \div 4 = 9$ units. So the perimeter of the rectangle is $36 + 9 + 36 + 9 =$.
6.
7.
8.
9.
10.