



Math Olympiad and Problem Solving Programs
E210 - Introductory Math Competitions
Problem Set 5.1 - Prime Factorization

Name:

Date:

- $7 + 41 = \boxed{48}$
- The prime numbers between 90 and 115 are: 97, 101, 103, 107, 109. Their average is $\boxed{105}$
- $\boxed{191}$
- $27! + 28! + 29! = 27! + 27! \times 28 + 27! \times 28 \times 29 = 27!(1 + 28 + 28 \times 29) = 27!(29 + 28 \times 29) = 27![29(1 + 28)] = 27! \times 29^2$. Thus the greatest prime factor of the number is 29. $\boxed{29}$
- Because of the ambiguity of the question, I would take any of the following answers: $\boxed{22, 121, 143}$
- $\boxed{240}$
- $\boxed{2, 3, 5, 41}$
- $\boxed{5}$
- $x = 2, y = 2, z = 2$. Thus $x + y + z = \boxed{6}$