



Math Olympiad and Problem Solving Programs  
E210 - Introductory Math Competitions  
Problem Set 7.2 - AMC 8 Remainders

Name:

Date:

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1.  E
2.  A
3. For every combination of  $5 \times 2$ , we have a 10. So we will change the number into prime factorization to see how many 10's there are.  $25 \times 25 \times 25 \times 25 \times 25 \times 25 \times 25 \times 8 \times 8 \times 8 = 5^{14} \times 2^9 = (2 \times 5)^9 \times 5^5$ . So there are 9 10's, and there are 9 zeroes.  C
4.  C
5.  D
6.  B
7.  D
8. So in this problem, we have  $2 \times 4 \times 6 \times 8$  multiplied together over and over again. The units digit of this expression is 4. Now figure out how many times the  $2 \times 4 \times 6 \times 8$  is multiplied together. We have once for the units, once for the 10's, once for the 20's, etc, up to once for the 90's. So there are 10 multiplications.  $4 \times 4 \times \dots \times 4$  together 10 times has units digit 6.  D
9.  E
10.  D