



Math Olympiad and Problem Solving Programs
E210 - Introductory Math Competitions
Problem Set 3.2 - AMC 8 Divisibility

Name:

Date:

1. A
2. D
3. There was a typo on the problem. The correct answer is supposed to be E, but D was correct as well. If you were marked wrong, please see the TA for corrected points. E
4. B
5. A
6. C
7. 11 = 2 because it is divisible by 1 and 11. 20 = 6 because 20 is divisible by 1, 2, 4, 5, 10, and 20. $2 \times 6 = 12$, and 12 = 6 because 12 is divisible by 1, 2, 3, 4, 6, and 12. A
8. B
9. C. If a number has 15, 20, and 25 as factors, then it also has $LCM(15, 20, 25)$ as a factor. So we find $LCM(15, 20, 25) = 300$. 300 divides three numbers between 1000 and 2000: 1200, 1500, 1800.
10. A. The multiples of 5 have a unit digits of 0 and 5. Then, $5 \times a + 3$ will have a unit digit of either 3 or 8. This is the clue we use to find the multiples of 6 plus 4 that also have a unit digit 3 or 8. The first one that meet the condition is 28, which is a multiple of 7.