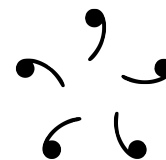


VCSMS PRIME

Program for Inducing Mathematical Excellence

Practice Final Exam

Answer Key



Part I. (2 points each)	11. D	6. D
1. D	12. D	7. D
2. D	13. D	8. B
3. C	14. A	9. A
4. C	15. C	10. B
5. D	Part II. (3 points each)	Part III. (6 points each)
6. A	1. B	1. 250
7. C	2. C	2. 7350
8. C	3. A	3. 931
9. A	4. D	4. 74/5
10. A	5. C	5. 2400

References. AIME is American Invitational Mathematics Examination, just search at Google. Mock AIME refers to 2017 Mock AIME I/II at <https://aops.com/community/c4t230036f4>. Mock AMC10 refers to AIME12345's Autumn Mock AMC 10 at <https://aops.com/community/c532586>. NIMO refers to National Internet Math Olympiad at <https://aops.com/community/c3423>.

Part I. (2 points each)	11. NIMO 19.1	6. Mock AIME I/3
1. NIMO 23.1	12. AIME 1992/1	7. NIMO 26.2
2. AIME 1989/1	13. NIMO 20.3	8. Mock AMC10/23
3. NIMO 20.1	14. NIMO 17.1	9. Mock AMC10/14
4. AIME 1983/1	15. AIME 1985/4	10. NIMO 18.2
5. NIMO 17.2	Part II. (3 points each)	Part III. (6 points each)
6. Mock AIME I/2	1. Mock AIME I/4	1. Mock AIME II/6
7. Mock AIME I/1	2. Bhattacharya*	2. NIMO 21.3
8. Mock AMC10/10	3. NIMO 23.3	3. Mock AIME II/3
9. Mock AMC10/11	4. Mock AIME II/2	4. Mock AIME II/7
10. NIMO 20.2	5. AIME 1994/5	5. NIMO 17.5

*Personal communication. \mathcal{S} consists of the numbers that are not divisible by a perfect square larger than one. The only choice that is divisible by a perfect square larger than one is choice C.