

Name _____

1. (2 points) Using the lattice multiplication algorithm, find the value of 324×57 .

2. (3 points) Find whole number values for a and b so that

$$2^{500} \cdot 3^{500} \cdot 6^{1000} = a^b$$

3. (3 points) Ron will leave USC to move back home for 90 days between his spring and fall semesters. His parents live 1 block from McDonald's and he knows that he can't resist the temptation of eating 2 Big Macs every day in addition to his usual diet. If he also plans to exercise more by playing tennis for 1.5 hours each day, then how much weight will he gain or lose during these 90 days? Facts that you may need to know: Each Big Mac has 576 calories; Playing tennis will burn 462 calories per hour; Each net gain of 3500 calories adds 1 pound of weight.

4. (2 points) Evaluate the following product using base 6 as indicated.

$$42_{six} \cdot 35_{six}$$