

Name \_\_\_\_\_

- No calculators are allowed.

1. (4 points) Use any method to evaluate the following.

(a)  $GCD(12, 30)$

(b)  $LCM(12, 30)$

(c)  $GCD(121500, 1148175)$

Hint:  $121500 = 2^2 \cdot 3^5 \cdot 5^3$  and  $1148175 = 3^8 \cdot 5^2 \cdot 7$

(d)  $LCM(121500, 1148175)$

2. (2 points) Two positive integers  $a$  and  $b$  satisfy  $GCD(a, b) = 150$  and  $a \cdot b = 1350000$ . Compute the value of  $LCM(a, b)$ .

3. (4 points) Todd and Nancy each have one bookcase. Each shelf in Todd's bookcase contains the same number of books as any other shelf in his bookcase. Each shelf in Nancy's bookcase contains the same number of books as any other shelf in her bookcase. Furthermore, Todd's bookcase has the same number of shelves as Nancy's bookcase. If Todd has 252 books and Nancy has 330 books, then what is the largest number of shelves they could possibly have in each of their bookcases?