

1. (2) Does 50 divide 100? Why or why not? Does 50 divide 80? Why or why not?
2. (4) Prove that if  $a=p^2 \times q^3$  and  $b=p^3 \times q^2$  where  $a$  and  $b$  are positive integers, and  $p$  and  $q$  are prime, then the greatest common divisor of  $axb$  is  $p^2 \times q^2$ .
3. (4) Prove that if  $a=p^2 \times q^3$  and  $b=p^3 \times q^2$  where  $a$  and  $b$  are positive integers, and  $p$  and  $q$  are prime, then the least common multiple of  $axb$  is  $p^3 \times q^3$ .