

1. Give a quantified formula for the following.
  - a. Some elements of the array  $b$ , in the range  $j$  through  $k$ , are equal to five and some are not.
  - b. In the array  $b$  which has indexes from 25 to 75, the maximum element is at index  $n$  or higher, and is greater than 50.

2. Which of the following are fully parenthesized propositions? (Write yes or no in the blank.)

$E$  is the expression  $(\exists z : p \leq z < q : b[z] < b[z+1] * b[z])$

Which substitutions are legal?

a. \_\_\_\_\_  $E_x^y$

b. \_\_\_\_\_  $E_q^z$

c. \_\_\_\_\_  $E_a^b$

d. \_\_\_\_\_  $E_p^q$

e. \_\_\_\_\_  $E_j^p$