

## Question #258

**Key: A**

Item (i) indicates that  $X$  must one of the four given values.

Item (ii) indicates that  $X$  cannot be 200

Item (iii) indicates that  $X$  cannot be 400.

First assume  $X = 100$ . Then the values of  $r$  are 5, 3, 2, and 1 and the values of  $s$  are 2,

1, 1, and 1. Then  $\hat{H}(410) = \frac{2}{5} + \frac{1}{3} + \frac{1}{2} + \frac{1}{1} = 2.23$  and thus the answer is 100. As a check,

if  $X = 300$ , the  $r$  values are 5, 4, 3, and 1 and the  $s$  values are 1, 1, 2, and 1. Then,

$$\hat{H}(410) = \frac{1}{5} + \frac{1}{4} + \frac{2}{3} + \frac{1}{1} = 2.12 .$$