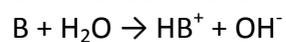


## Answer to Question #58552, Chemistry / Other

The pH of a 0.32 mol/L weak base solution is 9.8. Calculate the  $K_b$  of this base.

### Solution:

Weak base react with water:



$$K_b = \frac{[HB^+][OH^-]}{[B]}$$

$$[HB^+] = [OH^-] = 10^{-(14-pH)}$$

$$K_b = \frac{(6.31 \times 10^{-5})^2}{0.32 - 6.31 \times 10^{-5}} = 1.24 \times 10^{-8}$$

### Answer:

$$1.24 \times 10^{-8}$$