

The mean, median and unique mode of the positive integers 3, 4, 5, 6, 6, 7, x are all equal. What is x ?

Mode is unique \Rightarrow mode = 6

$$\text{So } \frac{3+4+5+6+6+7+x}{7} = 6$$

$$\Rightarrow \frac{31+x}{7} = 6$$

$$\Rightarrow 31+x = 42$$

$$\Rightarrow \boxed{x = 11}$$

Check: median is also 6.