

Answer on question 36152 – Math – Complex Analysis

Ram's television has 2 to 39 channels. If he starts at channel 13 and surfs pushing the channel-up button 407 times. On what channel is the television when he stops.

Solution

Ram has $39 - 2 + 1 = 38$ channels.

To finish the first circle we need to push the button $39 - 13 + 1 = 27$ times (we get the channel 2).

It remains $407 - 27 = 380$ pushes.

Let x is the channel when he stops. Then we get the equation

$$x = 380 - \left[\frac{380}{38} \right] * 38 + 2 = 2$$

Where $[.]$ is a floor function.

Answer: 2.