

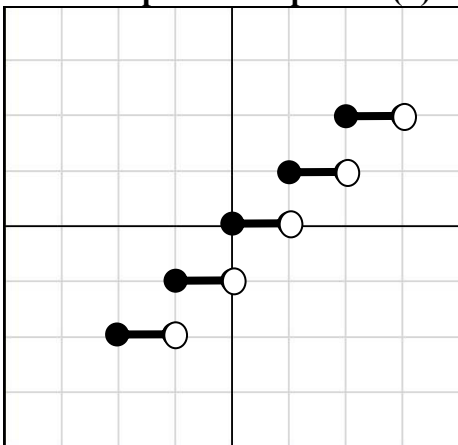
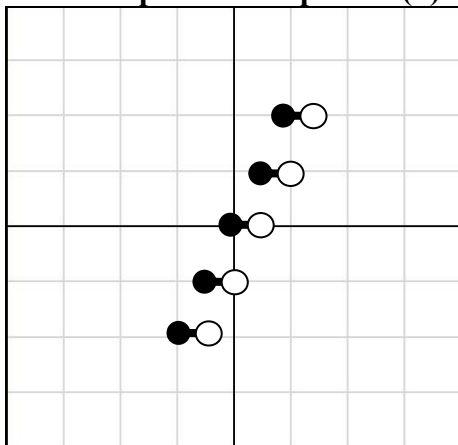
## A Selection of Greatest Integer (GI less than or equal) Functions

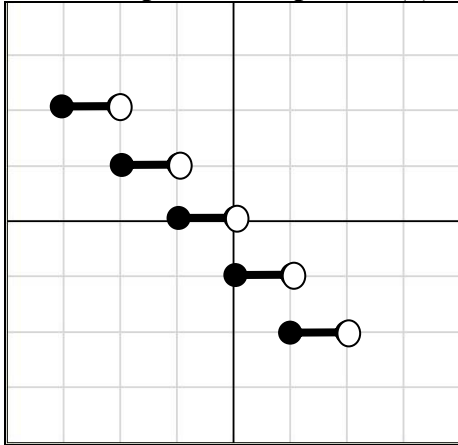
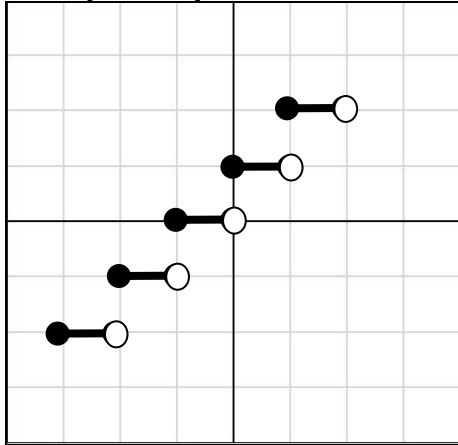
[Discussion of Step \(GI\) Functions](#) & [Discussion of Step \(GI\) Functions](#)

GI Function is also called the [Step \(Floor or Ceiling\)](#) [Floor \(Down\)](#) or [Ceiling \(Up\)](#) Function

@ Review discussion of Reciprocal Function & Investigate Characteristics below! @

@ What can you conclude about characteristics from discussion and sample graphs? @

$y \text{ or } f(x) = [x] \quad * -4 < x \& y < +4$ Note Size & Direction! Determine Domain & Range! One Step & One Apart & (+)	Verify GC by Table!	$y \text{ or } f(x) = [2x] \quad * -4 < x \& y < +4$ Note Size & Direction! Determine Domain & Range! Half Steps & One Apart & (+)																										
	<table style="margin: auto;"> <tr><td style="padding: 2px;"><b>X</b></td><td style="padding: 2px;"><b>Y</b></td></tr> <tr><td style="padding: 2px;">0</td><td style="padding: 2px;">0</td></tr> <tr><td style="padding: 2px;">+1/4</td><td style="padding: 2px;">0</td></tr> <tr><td style="padding: 2px;">+1/2</td><td style="padding: 2px;">0</td></tr> <tr><td style="padding: 2px;">+3/4</td><td style="padding: 2px;">0</td></tr> <tr><td style="padding: 2px;">+1</td><td style="padding: 2px;">+1</td></tr> <tr><td colspan="2" style="padding: 2px;"> </td></tr> <tr><td style="padding: 2px;"><b>X</b></td><td style="padding: 2px;"><b>Y</b></td></tr> <tr><td style="padding: 2px;">0</td><td style="padding: 2px;">0</td></tr> <tr><td style="padding: 2px;">+1/8</td><td style="padding: 2px;">0</td></tr> <tr><td style="padding: 2px;">+1/6</td><td style="padding: 2px;">0</td></tr> <tr><td style="padding: 2px;">+1/4</td><td style="padding: 2px;">0</td></tr> <tr><td style="padding: 2px;">+1/2</td><td style="padding: 2px;">+1</td></tr> </table>	<b>X</b>	<b>Y</b>	0	0	+1/4	0	+1/2	0	+3/4	0	+1	+1			<b>X</b>	<b>Y</b>	0	0	+1/8	0	+1/6	0	+1/4	0	+1/2	+1	
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GI: If less down and = to than = I!		Big Multiplier ^ Little Multiplier ^																										

$y \text{ or } f(x) = -[x+1] \quad * -4 < x \& y < +4$ How does inside (+ or -) affect? Determine Domain & Range One Step & Two Apart & (-)	Verify GC by Table!	$y \text{ or } f(x) = [x]+1 \quad * -4 < x \& y < +4$ How does outside (+ or -) affect? Determine Domain & Range 1 Step & 1 Apart & 1 Shift Left																										
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The General Equation for [Greatest Integer](#) Functions?  $y = (\pm A [ Bx \pm C ] \pm D$

Using a Graphing Calculator investigate various changes in A,B,C,D! **Good Luck!**

GI rounds Integers down:  $2.3 = 2$   $2.5 = 2$   $2.7 = 2!$  What about  $-2.3 = ?$   $-2.5 = ?$   $-2.7 = ?$

What would be some Real World uses for GI Function? Use Wikipedia to investigate!