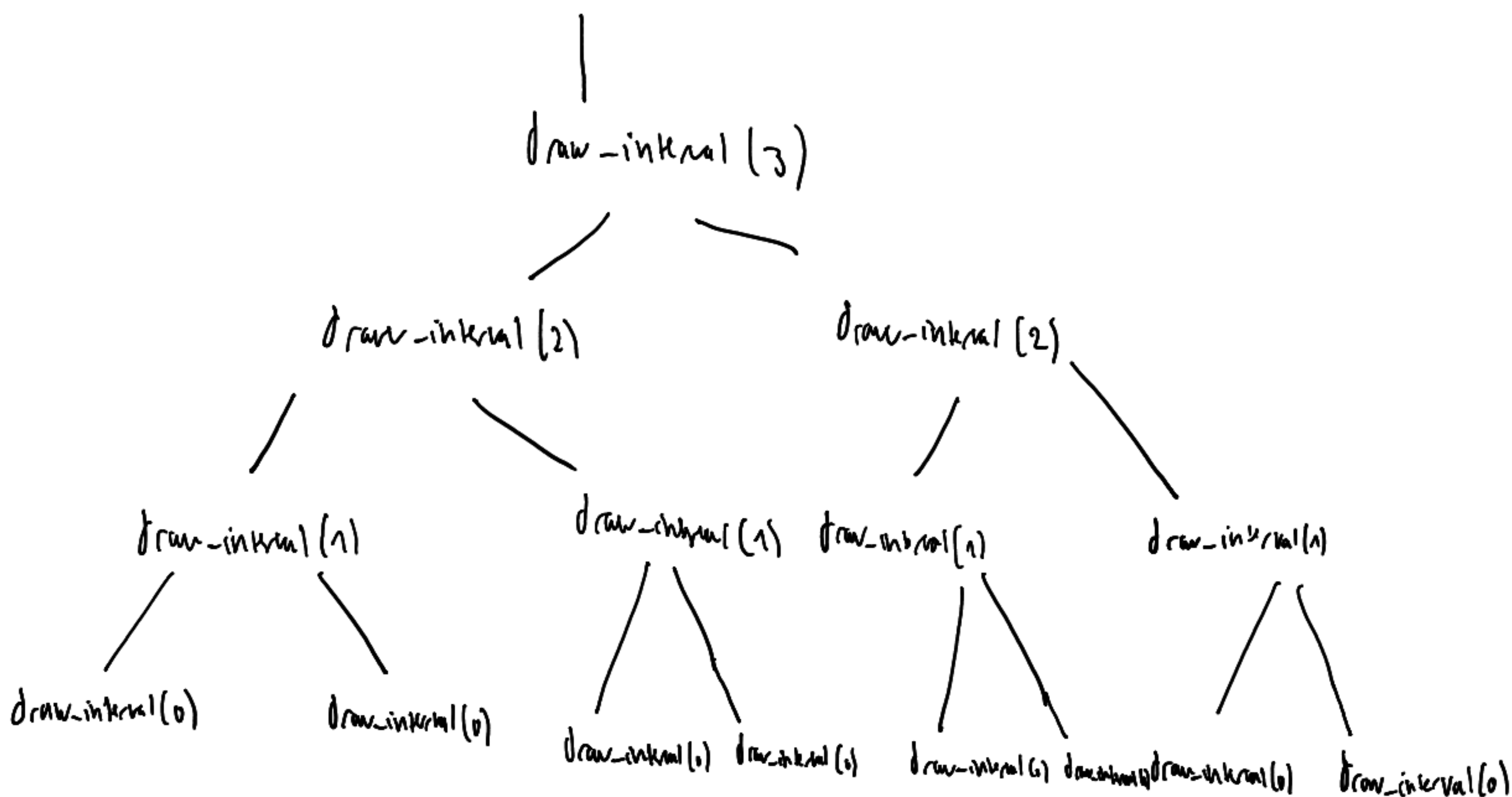


Calls to draw-interval:

draw-ruler (4, 1)



$$1 + 2 + 4 + 8 = 15$$

$$\sum_{i=0}^n 2^i = 2^{n+1} - 1, \text{ where } n = \text{central-tick-length}$$

$$\therefore 2^{\text{central-length} + 1} - 1$$

$$= 2^{\text{major-length}} - 1 \text{ for 1 inch}$$

$$\text{inches} \cdot (2^{\text{major-length}} - 1) \text{ for multiple inches}$$

Calls to draw-line:

calls from draw-interval

$$\sum_{i=0}^{n-1} 2^i = 2^n - 1$$

$$= 2^{\text{major-length} - 1} - 1, \text{ for 1 inch}$$

$$1 + \text{inches} \cdot (2^{\text{major-length} - 1} - 1) + \text{inches}$$

because a line is also drawn for 0

$$= 1 + \text{inches} \cdot 2^{\text{major-length} - 1} - \text{inches} + \text{inches}$$

$$= 1 + \text{inches} \cdot 2^{\text{major-length} - 1}$$

calls from the loop,
by draw-ruler