



Memoize supports TikZ pictures with `overlays` and other constructs which make the typeset material stick out of the bounding box, like TeX's `\llap` and `\rlap`. In the pictures below, the bounding box (the size of the typeset material as perceived by TeX) is the blue node.

When Memoize externalizes a picture, it does not put it on a PDF page of size precisely equal to the bounding box of the picture. By default,<sup>1</sup> it pads the picture by one inch<sup>2</sup> on each side of the bounding box. The picture in Figure 1 is thus externalized into a page of size indicated by the red rectangle.

After two compilations of this file, the southern pin of Figure 1 will still be entirely visible, while its eastern pin will lose two characters.<sup>3</sup> By now, it should be clear why: the rightmost part of the eastern pin falls out of the memo PDF page.

The solution is very simple, if manual. To show the entire eastern pin (Figure 2), we need to increase the padding on the right. `lem` will do: `\memoizeset{padding right=1in+1em}`. The size of the memo pdf page is shown by the green rectangle.

Note that the default padding on every side is `1in`, so `padding right=1em` would actually decrease the padding and yield a wrong result — good thing (simple) math expressions<sup>4</sup> are allowed as a value of the padding keys!

Here is the list of padding keys. And by the way, too much padding can never hurt.

- `padding left`, `padding right`, `padding top`, `padding bottom`
- `padding x`, `padding y`: the horizontal and the vertical sides
- `padding`: all sides

<sup>1</sup>The default is motivated by standard values of `\pdfhorigin` and `\pdfvorigin`, which is one inch.  
<sup>2</sup>For those who know what I'm talking about: the default padding is actually one *true* inch.  
<sup>3</sup>You will see the entire eastern pin after the first pass, but don't let this fool you! In the first pass, Memoize does not typeset the picture by including it from external graphics, but uses the box that was typeset normally. But it the second pass, the picture is “typeset” by including the externalized graphics, and because the externalized graphics sticks out of the PDF page, a part of it will be missing.  
<sup>4</sup>The value is interpreted as eTeX's `\dimexpr`.

