Resize as Warp

\[ x', y' = f(x, y) \]

pixel \( \rightarrow \) some region
point sample \( \leftarrow \) some region
inverse / forward splitting \( \leftarrow \) way to look at convolution

What does this say about kernel size?
need to be big enough to cover everything (downsample)
why not no overlap?

\[ \text{\leftarrow not enough cutoff might alias} \]
Image Warping

\[ x', y' = f(x, y) \]  \rightarrow \text{resize is special case}

forward warp \quad \text{splat}
reverse warp \quad \text{sample (need } f^{-1} \text{)}

How to filter?

1. don't (point sample)
2. size of kernel = size of area mapped
   \( 0 \) derivative
   \( 2 \) differences
   \( \frac{a^2 + b^2}{4} = \rho^2 \)
   \( \rho \) circle shape
   (gaussian/circle \( \Rightarrow \) ellipse, or \( \cdots \))
4. super sample
   multiple samples per pixel
   uniform resampling is easy
5. map little squares