Fractal Hexagon Calculations

sqrt(3) / 2 = 0.86602

2 / sqrt(3) = 1.15470

Board point to point 740,

side to side = p-to-p \* sqrt(3) / 2 = 640.8548

Tiles

Add 1px to vert and horizontal dimensions to account for 1px outline..5px outline extends

outside the tile on both sides and top and bottom.

Offsets for CREATING tile images are different from offsets for INDEXING into the images.

Illustrator doesn’t include the outline when placing. But later when indexing into the images,

the .5px outline must be accounted for.

Small tile artboard:

H: 15 \* (15+1) = 240

V: 10\*(17.3205+1.1547) = 184.752

Medium tile artboard:

H: 11 \* (45+1) = 506

V: 12 \* (51.9615+1.1547) = 637.3944

Large tile artboard:

H: 12 \* (135+1) = 1632

V: 2 \* (155.8845+1.1547) = 314.0784

Large

H, V offsets

H offset from center = -136/2 + (index - 5) \* 136

= (index - 5) \* 136 - 68

V offset from center = +-(155.8845+1.1547)/2, adjust odd cell offset

= +-78.5196, adjust eccentric cell offset

V odd cell offset = s-to-s / (12\*sqrt3) = 135 / 20.7846 = 6.4952