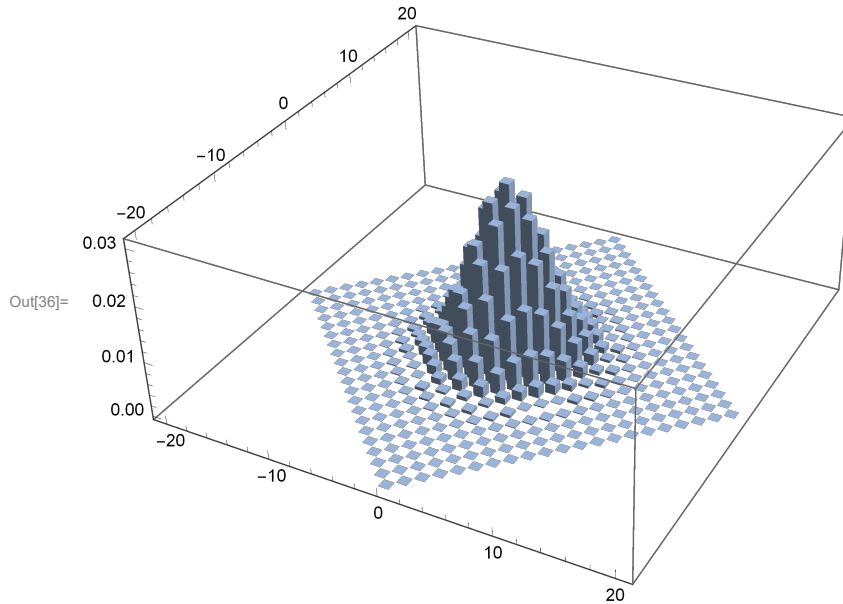In[1]:= `bin[a_, b_] := If[IntegerQ[b], Binomial[a, b], 0]`

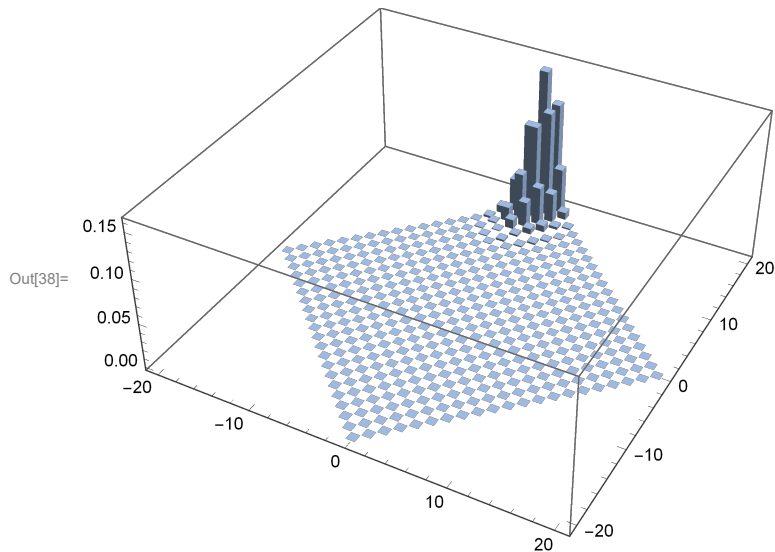In[24]:= `pk[x_, y_, n_, k_, pa_, pb_, pd_, ps_] :=` $(pa / (pa + pb))$ `^` $((k + y) / 2)$
$(pb / (pa + pb))$ `^` $(k - (k + y) / 2)$ `bin`$[k, (k + y) / 2]$ $(pd / (pd + ps))$ `^` $((n - k + x) / 2)$
$(ps / (pd + ps))$ `^` $(n - k - (n - k + x) / 2)$ `bin`$[n - k, (n - k + x) / 2]$

In[3]:= `p[x_, y_, n_, pa_, pb_, pd_, ps_] :=`
`Sum`$\big[$`pk[x, y, n, k, pa, pb, pd, ps]` $(pa + pb)$ `^k` $(pd + ps)$ `^` $(n - k)$ `bin[n, k], {k, 0, n}`$\big]$

In[36]:= `DiscretePlot3D[p[x, y, 20, 0.25, 0.25, 0.25, 0.25], {x, -20, 20},`
`{y, -20, 20}, ExtentSize → Full, ExtentElementFunction → "Cube"]`

In[38]:= `DiscretePlot3D[p[x, y, 20, 0.9, 0.02, 0.02, 0.06], {x, -20, 20},`
`{y, -20, 20}, ExtentSize → Full, ExtentElementFunction → "Cube"]`

In[40]:= **DiscretePlot3D[p[x, y, 20, 0.4, 0.1, 0.4, 0.1], {x, -20, 20},**
{y, -20, 20}, ExtentSize → Full, ExtentElementFunction → "Cube"]

Out[40]=