In[1]:= **v := 1**

a := 3

n := 1

In[46]:= **n := 0**

$$\phi[\mathbf{x\_},\ \mathbf{y\_}] := \sum_{i=0}^{n} \frac{4}{(2\ i+1)\ \pi}\ e^{\frac{-(2\ i+1)\ x}{a}}\ \text{Sin}\left[\frac{(2\ i+1)\ \pi\ y}{3}\right]$$

Plot3D[ϕ[x, y], {x, 0, 10}, {y, 0, 3}, ViewPoint → {2, -2, 1}]
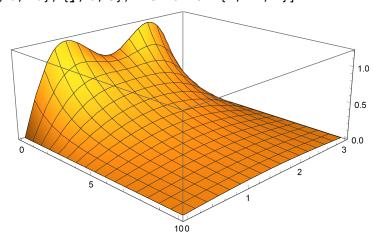
Out[48]=

In[49]:= **n := 1**

$$\phi[\mathbf{x\_},\ \mathbf{y\_}] := \sum_{i=0}^{n} \frac{4}{(2\ i+1)\ \pi}\ e^{\frac{-(2\ i+1)\ x}{a}}\ \text{Sin}\left[\frac{(2\ i+1)\ \pi\ y}{3}\right]$$

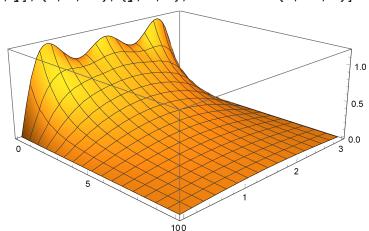**Plot3D[ϕ[x, y], {x, 0, 10}, {y, 0, 3}, ViewPoint → {2, -2, 1}]**

Out[51]=

In[52]:= **n := 2**

$$\phi[x\_, y\_] := \sum_{i=0}^{n} \frac{4}{(2\,i+1)\,\pi}\, e^{\frac{-(2\,i+1)\,x}{a}}\, \text{Sin}\left[\frac{(2\,i+1)\,\pi\,y}{3}\right]$$

Plot3D[ϕ[x, y], {x, 0, 10}, {y, 0, 3}, ViewPoint → {2, -2, 1}]

Out[54]=

In[55]:= **n := 3**

$$\phi[x\_, y\_] := \sum_{i=0}^{n} \frac{4}{(2\,i+1)\,\pi}\, e^{\frac{-(2\,i+1)\,x}{a}}\, \text{Sin}\left[\frac{(2\,i+1)\,\pi\,y}{3}\right]$$
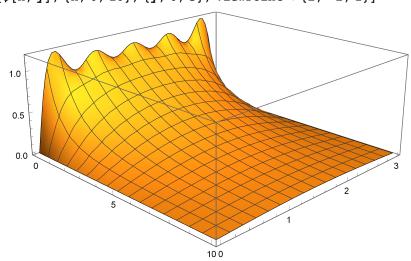
Plot3D[ϕ[x, y], {x, 0, 10}, {y, 0, 3}, ViewPoint → {2, -2, 1}]

Out[57]=

In[58]:= **n := 4**

$$\phi[x\_, y\_] := \sum_{i=0}^{n} \frac{4}{(2\,i+1)\,\pi}\; e^{\frac{-(2\,i+1)\,x}{a}}\; \text{Sin}\!\left[\frac{(2\,i+1)\,\pi\,y}{3}\right]$$

Plot3D[ϕ[x, y], {x, 0, 10}, {y, 0, 3}, ViewPoint → {2, -2, 1}]

Out[60]=

In[43]:= **n := 5**

$$\phi[x\_, y\_] := \sum_{i=0}^{n} \frac{4}{(2\,i+1)\,\pi}\; e^{\frac{-(2\,i+1)\,x}{a}}\; \text{Sin}\!\left[\frac{(2\,i+1)\,\pi\,y}{3}\right]$$

Plot3D[ϕ[x, y], {x, 0, 10}, {y, 0, 3}, ViewPoint → {2, -2, 1}]

Out[45]=

In[61]:= **n := 6**

$$\phi[\text{x\_}, \text{y\_}] := \sum_{i=0}^{n} \frac{4}{(2\,i+1)\,\pi}\,e^{\frac{-(2\,i+1)\,x}{a}}\,\text{Sin}\!\left[\frac{(2\,i+1)\,\pi\,y}{3}\right]$$

Plot3D[ϕ[x, y], {x, 0, 10}, {y, 0, 3}, ViewPoint → {2, -2, 1}]

Out[63]=

In[64]:= **n := 7**

$$\phi[\text{x\_}, \text{y\_}] := \sum_{i=0}^{n} \frac{4}{(2\,i+1)\,\pi}\,e^{\frac{-(2\,i+1)\,x}{a}}\,\text{Sin}\!\left[\frac{(2\,i+1)\,\pi\,y}{3}\right]$$
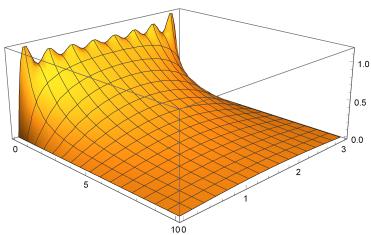
Plot3D[ϕ[x, y], {x, 0, 10}, {y, 0, 3}, ViewPoint → {2, -2, 1}]

Out[66]=

In[67]:= **n := 100**

$$\phi[x\_, y\_] := \sum_{i=0}^{n} \frac{4}{(2\,i+1)\,\pi} \; e^{\frac{-(2\,i+1)\,x}{a}} \; \text{Sin}\left[\frac{(2\,i+1)\,\pi\,y}{3}\right]$$

Plot3D[ϕ[x, y], {x, 0, 10}, {y, 0, 3}, ViewPoint → {2, -2, 1}]

Out[69]=