In[21]:=
$$\mathbf{Fnn1FDdt = -\frac{\left(H^2 k^3 U w\right) dt^2}{2\left(3 + H^2 k^2\right)}}$$

$$\mathbf{Fnn1FDdxdt = -\frac{1}{2}\left(\sqrt{g H}\, k^2\right) dt * dx}$$

$$\mathbf{Fnn1FDdx = 0;}$$

Out[21]=
$$-\frac{dt^2 H^2 k^3 U w}{2\left(3 + H^2 k^2\right)}$$

Out[22]=
$$-\frac{1}{2} dt\, dx \sqrt{g H}\, k^2$$

In[24]:=
$$\mathbf{Fnn2FDdt = -\frac{\left(H^2 k^3 U w\right) dt^2}{2\left(3 + H^2 k^2\right)}}$$

$$\mathbf{Fnn2FDdxdt = -\frac{i\left(27 k^3 + 9 H^2 k^5 + H^4 k^7\right) U dt}{12\left(3 + H^2 k^2\right)^2} dx^2}$$

$$\mathbf{Fnn2FDdx = 0;}$$

Out[24]=
$$-\frac{dt^2 H^2 k^3 U w}{2\left(3 + H^2 k^2\right)}$$

Out[25]=
$$-\frac{i\, dt\, dx^2\left(27 k^3 + 9 H^2 k^5 + H^4 k^7\right) U}{12\left(3 + H^2 k^2\right)^2}$$

In[27]:=
$$\mathbf{Fnn2FEMdt = -\frac{\left(H^2 k^3 U w\right) dt^2}{2\left(3 + H^2 k^2\right)}}$$

$$\mathbf{Fnn2FEMdxdt = -\frac{i\left(54 k^3 + 45 H^2 k^5 + 10 H^4 k^7\right) U dt}{120\left(3 + H^2 k^2\right)^2} dx^2}$$

$$\mathbf{Fnn2FEMdx = 0;}$$

Out[27]=
$$-\frac{dt^2 H^2 k^3 U w}{2\left(3 + H^2 k^2\right)}$$

Out[28]=
$$-\frac{i\, dt\, dx^2\left(54 k^3 + 45 H^2 k^5 + 10 H^4 k^7\right) U}{120\left(3 + H^2 k^2\right)^2}$$

In[30]:=
$$\mathbf{Fnn3FDdt = -\frac{\left(H^2 k^3 U w\right) dt^2}{2\left(3 + H^2 k^2\right)}}$$

$$\mathbf{Fnn3FDdxdt = -\frac{1}{12}\left(\sqrt{g H}\, k^4\right) dt\, dx^3}$$

$$\mathbf{Fnn3FDdx = 0;}$$

Out[30]=
$$-\frac{dt^2 H^2 k^3 U w}{2\left(3 + H^2 k^2\right)}$$

Out[31]=
$$-\frac{1}{12} dt\, dx^3 \sqrt{g H}\, k^4$$