

$$\text{In[13]}:= \int \mathbf{x} * \mathbf{Cos}[\mathbf{m} * \mathbf{x}] \, \mathbf{d} \mathbf{x}$$

$$\text{Out[13]}= \frac{\mathbf{Cos}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}^2} + \frac{\mathbf{x} \, \mathbf{Sin}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}}$$

$$\text{In[7]}:= \int \mathbf{x}^2 * \mathbf{Cos}[\mathbf{m} * \mathbf{x}] \, \mathbf{d} \mathbf{x}$$

$$\text{Out[7]}= \frac{2 \, \mathbf{x} \, \mathbf{Cos}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}^2} + \frac{\left(-2 + \mathbf{m}^2 \, \mathbf{x}^2\right) \mathbf{Sin}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}^3}$$

$$\text{In[8]}:= \int \mathbf{x}^3 * \mathbf{Cos}[\mathbf{m} * \mathbf{x}] \, \mathbf{d} \mathbf{x}$$

$$\text{Out[8]}= \frac{3 \left(-2 + \mathbf{m}^2 \, \mathbf{x}^2\right) \mathbf{Cos}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}^4} + \frac{\mathbf{x} \left(-6 + \mathbf{m}^2 \, \mathbf{x}^2\right) \mathbf{Sin}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}^3}$$

$$\text{In[14]}:= \int \mathbf{x} * \mathbf{Sin}[\mathbf{m} * \mathbf{x}] \, \mathbf{d} \mathbf{x}$$

$$\text{Out[14]}= -\frac{\mathbf{x} \, \mathbf{Cos}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}} + \frac{\mathbf{Sin}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}^2}$$

$$\text{In[9]}:= \int \mathbf{x}^2 * \mathbf{Sin}[\mathbf{m} * \mathbf{x}] \, \mathbf{d} \mathbf{x}$$

$$\text{Out[9]}= -\frac{\left(-2 + \mathbf{m}^2 \, \mathbf{x}^2\right) \mathbf{Cos}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}^3} + \frac{2 \, \mathbf{x} \, \mathbf{Sin}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}^2}$$

$$\text{In[11]}:= \int \mathbf{x}^3 * \mathbf{Sin}[\mathbf{m} * \mathbf{x}] \, \mathbf{d} \mathbf{x}$$

$$\text{Out[11]}= -\frac{\mathbf{x} \left(-6 + \mathbf{m}^2 \, \mathbf{x}^2\right) \mathbf{Cos}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}^3} + \frac{3 \left(-2 + \mathbf{m}^2 \, \mathbf{x}^2\right) \mathbf{Sin}[\mathbf{m} \, \mathbf{x}]}{\mathbf{m}^4}$$

⋮