In[45]:=
```
f[x_] = x^3 * Exp[Sin[x]]
```

Out[45]= $e^{\text{Sin}[x]}\, x^3$

In[6]:=
```
D[f[x], x]
```

Out[6]= $3\, e^{\text{Sin}[x]}\, x^2 + e^{\text{Sin}[x]}\, x^3 \text{Cos}[x]$

In[14]:=
```
Simplify[D[f[x], {x, 3}]]
```

Out[14]= $e^{\text{Sin}[x]} \left(6 + 9\, x^2 \text{Cos}[x]^2 + x^3 \text{Cos}[x]^3 - 9\, x^2 \text{Sin}[x] - x \text{Cos}[x] \left(-18 + x^2 + 3\, x^2 \text{Sin}[x]\right)\right)$

In[12]:=
```
Expand[(a + b)^13]
```

Out[12]= $a^{13} + 13\, a^{12} b + 78\, a^{11} b^2 + 286\, a^{10} b^3 + 715\, a^9 b^4 + 1287\, a^8 b^5 + 1716\, a^7 b^6 +$
$1716\, a^6 b^7 + 1287\, a^5 b^8 + 715\, a^4 b^9 + 286\, a^3 b^{10} + 78\, a^2 b^{11} + 13\, a\, b^{12} + b^{13}$

In[15]:=
```
Integrate[Sin[x], x]
```

Out[15]= $-\text{Cos}[x]$

In[16]:=
```
Integrate[Sin[x], {x, 5, 7}]
```

Out[16]= $\text{Cos}[5] - \text{Cos}[7]$

In[17]:=
```
Integrate[Cos[x^2], x]
```

Out[17]= $\sqrt{\frac{\pi}{2}}\ \text{FresnelC}\left[\sqrt{\frac{2}{\pi}}\ x\right]$

In[36]:=
```
FresnelC[7.5]
```

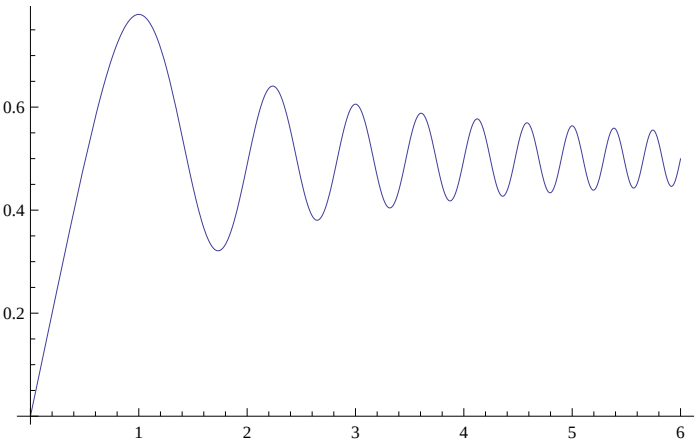
Out[36]= 0.516018

In[37]:=
```
N[FresnelC[75 / 10], 200]
```

Out[37]= 0.51601825015233634634154681699468840040235028407929997987832115912713447490885525116874830601758576945177979739071572773083921036038105545068907422697063959770654865906299157048495345150278164909233065

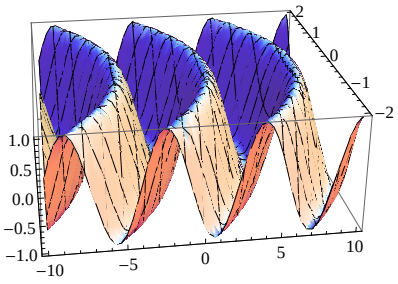
In[42]:=
```
Plot[FresnelC[x], {x, 0, 6}]
```

Out[42]=



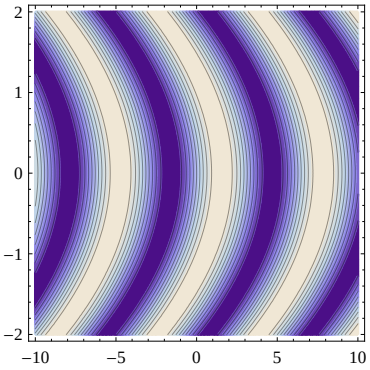
In[30]:=
```
Plot3D[Sin[x + y^2], {x, -10, 10}, {y, -2, 2}]
```

Out[30]=



In[31]:=
```
ContourPlot[Sin[x + y^2], {x, -10, 10}, {y, -2, 2}]
```

Out[31]=



In[43]:=
```
Apart[(2 * x + 3) / ((x^2 - 1) * (2 * x^2 + 6 * x + 12))]
```

Out[43]=
$$\frac{1}{8\ (-1+x)}-\frac{1}{16\ (1+x)}+\frac{-6-x}{16\left(6+3\,x+x^2\right)}$$

In[44]:=
```
Integrate[(2 * x + 3) / ((x^2 - 1) * (2 * x^2 + 6 * x + 12)), x]
```

Out[44]=
$$\frac{1}{160}\left(-6\sqrt{15}\ \text{ArcTan}\left[\frac{3+2\,x}{\sqrt{15}}\right]+20\,\text{Log}[1-x]-10\,\text{Log}[1+x]-5\,\text{Log}\left[6+3\,x+x^2\right]\right)$$

In[47]:=
```
Integrate[1/(8 (-1 + x)) - 1/(16 (1 + x)) + (-6 - x)/(16 (6 + 3 x + x^2)), x]
```

Out[47]=
$$\frac{1}{160}\left(-6\sqrt{15}\ \text{ArcTan}\left[\frac{3+2\,x}{\sqrt{15}}\right]+20\,\text{Log}[-1+x]-10\,\text{Log}[1+x]-5\,\text{Log}\left[6+3\,x+x^2\right]\right)$$

In[48]:=
```
Integrate[1 / Sqrt[1 + x^(1 / 3)], x]
```

Out[48]=
$$\frac{2}{5}\sqrt{1+x^{1/3}}\ \left(8-4\,x^{1/3}+3\,x^{2/3}\right)$$

In[53]:=
```
Integrate[1 / Sqrt[1 + x^(1 / 3)], {x, 1, 8}]
```

Out[53]=
$$\frac{2}{5}\left(-7\sqrt{2}+12\sqrt{3}\right)$$