In[1]:=
```
Solve[x^2 + 9 * x + 2 == 0, x]
```

Out[1]=
$$\left\{\left\{x \to \frac{1}{2}\left(-9-\sqrt{73}\right)\right\},\ \left\{x \to \frac{1}{2}\left(-9+\sqrt{73}\right)\right\}\right\}$$

In[2]:=
```
Solve[x^2 + 9 * x + 2 == 0, x]
```

Out[2]=
$$\left\{\left\{x \to \frac{1}{2}\left(-9-\sqrt{73}\right)\right\},\ \left\{x \to \frac{1}{2}\left(-9+\sqrt{73}\right)\right\}\right\}$$

In[3]:=
```
Solve[a * x^2 + b * x + c == 0, x]
```

Out[3]=
$$\left\{\left\{x \to \frac{-b-\sqrt{b^2-4\,a\,c}}{2\,a}\right\},\ \left\{x \to \frac{-b+\sqrt{b^2-4\,a\,c}}{2\,a}\right\}\right\}$$

In[7]:=
```
NSolve[a * x^3 + b * x^2 + c * x + d == 0, x]
```

Out[7]=
$$\left\{\left\{x \to -\frac{0.333333\,b}{a} + \left((0.209987-0.363708\,i)\left(-1.\,b^2+3.\,a\,c\right)\right)\Big/\left(a\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d+\sqrt{4.\left(-1.\,b^2+3.\,a\,c\right)^3+\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d\right)^2}\right)^{1/3}\right)-\frac{1}{a}\right.$$
$$(0.132283+0.229122\,i)\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d+\sqrt{4.\left(-1.\,b^2+3.\,a\,c\right)^3+\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d\right)^2}\right)^{1/3}\Bigg\},$$
$$\left\{x \to -\frac{0.333333\,b}{a} + \left((0.209987+0.363708\,i)\left(-1.\,b^2+3.\,a\,c\right)\right)\Big/\left(a\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d+\sqrt{4.\left(-1.\,b^2+3.\,a\,c\right)^3+\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d\right)^2}\right)^{1/3}\right)-\frac{1}{a}\right.$$
$$(0.132283-0.229122\,i)\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d+\sqrt{4.\left(-1.\,b^2+3.\,a\,c\right)^3+\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d\right)^2}\right)^{1/3}\Bigg\},$$
$$\left\{x \to -\frac{0.333333\,b}{a} - \left(0.419974\left(-1.\,b^2+3.\,a\,c\right)\right)\Big/\left(a\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d+\sqrt{4.\left(-1.\,b^2+3.\,a\,c\right)^3+\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d\right)^2}\right)^{1/3}\right)+\frac{1}{a}\right.$$
$$\left.0.264567\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d+\sqrt{4.\left(-1.\,b^2+3.\,a\,c\right)^3+\left(-2.\,b^3+9.\,a\,b\,c-27.\,a^2\,d\right)^2}\right)^{1/3}\Bigg\}\right\}$$

In[8]:=
```
NSolve[x^5 + 16 * x^4 + 7 * x^3 + 17 * x^2 + 11 * x + 5 == 0, x]
```

Out[8]=
$$\{\{x \to -15.6187\},\ \{x \to -0.386706-0.39778\,i\},\ \{x \to -0.386706+0.39778\,i\},\ \{x \to 0.196058-1.00086\,i\},\ \{x \to 0.196058+1.00086\,i\}\}$$

In[6]:=
```
Solve[Sin[ArcCos[x^2 - x]] == 1, x]
```

Out[6]=
```
{{x → 0}, {x → 1}}
```

In[9]:=
```
Solve[{5 x^2 + 6 y^2 == 9, x + y == 1}, {x, y}]
```

Out[9]=
$$\left\{\left\{x \to \frac{1}{11}\left(6-\sqrt{69}\right),\ y \to \frac{1}{11}\left(5+\sqrt{69}\right)\right\},\ \left\{x \to \frac{1}{11}\left(6+\sqrt{69}\right),\ y \to \frac{1}{11}\left(5-\sqrt{69}\right)\right\}\right\}$$

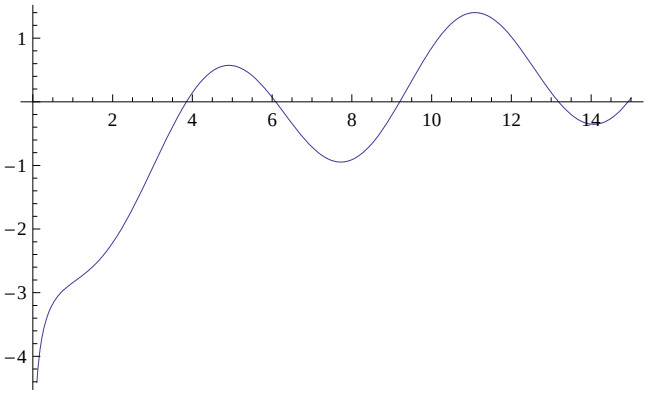
In[10]:=
```
Solve[{x + y + z == 9, x + 4 * y == 4, 2 * x + 3 * y + z == 9}, {x, y, z}]
```

Out[10]=
```
{{x → -4, y → 2, z → 11}}
```

Solve::tdep : The equations appear to involve the variables to be solved for in an essentially non-algebraic way. ≫

In[15]:=
```
Plot[{Log[x] - Sin[x] - 2 == 0}, {x, 0, 15}]
```

Out[15]=

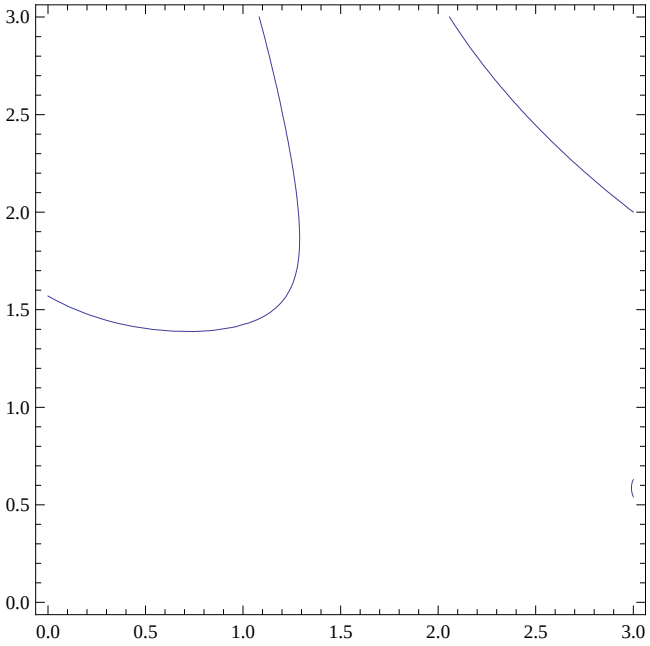


In[14]:=
```
FindRoot[{Log[x] - Sin[x] - 2 == 0}, {x, 4}]
```

Out[14]=
```
{x → 3.85128}
```

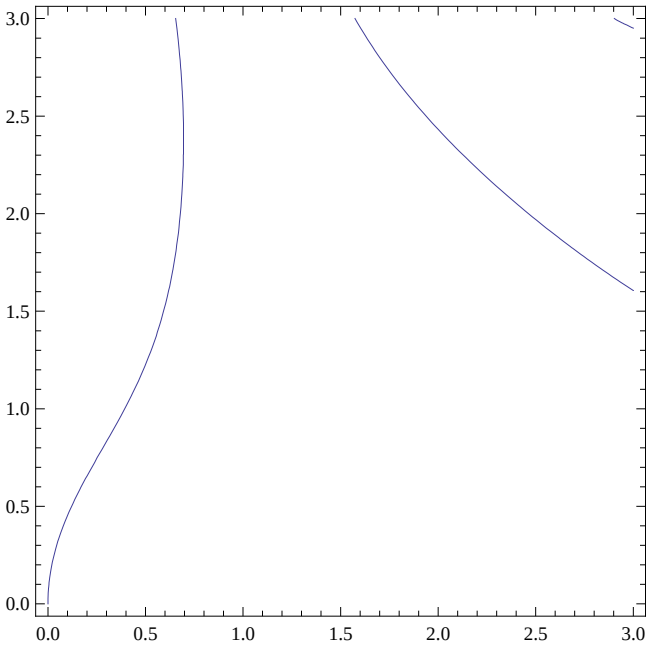
In[16]:=
```
a = ContourPlot[{Sin[x * y] == Sin[x] + Cos[y]}, {x, 0, 3}, {y, 0, 3}]
```

Out[16]=



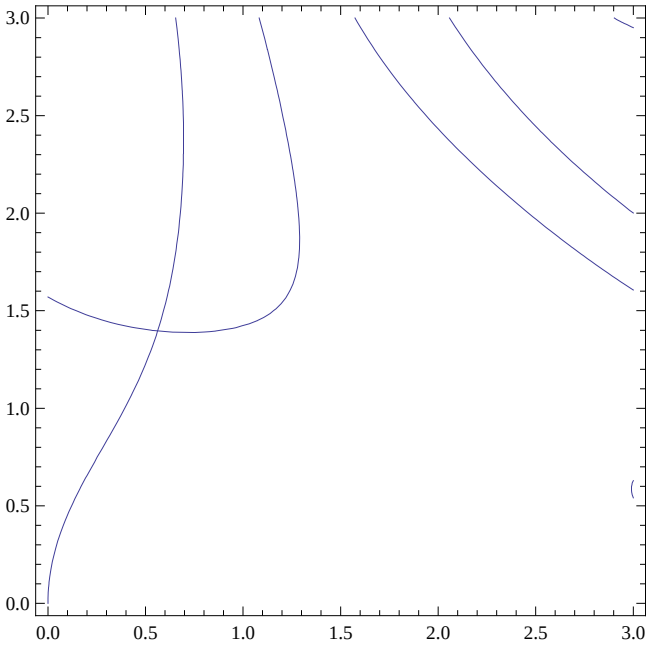
In[17]:=
```
b = ContourPlot[{Cos[x * y] == Sin[x] + Cos[y]}, {x, 0, 3}, {y, 0, 3}]
```

Out[17]=



In[18]:=
```
Show[a, b]
```

Out[18]=



In[19]:=
```
FindRoot[{{Sin[x * y] == Sin[x] + Cos[y]}, {Cos[x * y] == Sin[x] + Cos[y]}}, {x, 0.6}, {y, 1.4}]
```

Out[19]=
```
{x → 0.562547, y → 1.39615}
```