In[78]:=
```
f[x_] = If[0 ≤ x ≤ 1, 1, 0]
```

Out[78]=
```
If[0 ≤ x ≤ 1, 1, 0]
```

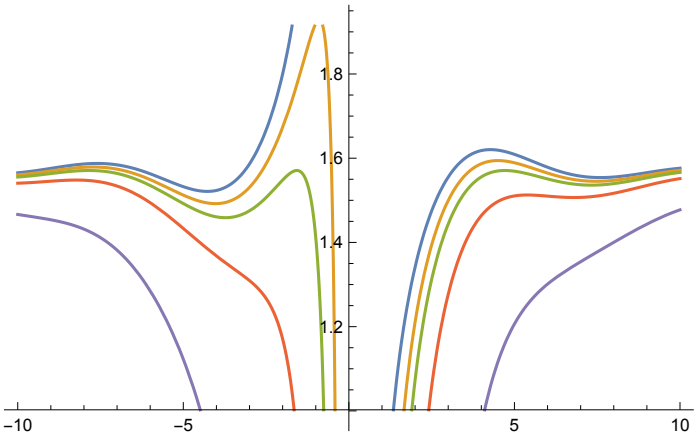
```
DSolve[
 {2 Sin[y[x]] x - y[x] Cos[x] + (x^2 Cos[y[x]] - Sin[x]) y'[x] == 0, y[0] == π/2}, y[x], x]
```

Out[68]=
```
Solve[x^2 Sin[y[x]] - Sin[x] y[x] == 0, y[x]]
```

In[70]:=
```
y[x] := ArcCos[Sin[x] / x^2]
```

In[172]:=
```
Plot[{y[x], ArcCos[(Sin[x] + .5) / x^2], ArcCos[(Sin[x] + 1) / x^2],
  ArcCos[(Sin[x] + π^2/4) / x^2], ArcCos[(Sin[x] + π^2) / x^2]}, {x, -10, 10}]
```

Out[172]=



In[225]:=
```
StreamPlot[{{1, Sin[x] - x^2 Cos[y]}, {1, Sin[x] - x^2 Cos[y] - .5},
  {1, Sin[x] - x^2 Cos[y] - 1}, {1, Sin[x] - x^2 Cos[y] - π^2/4},
  {1, Sin[x] - x^2 Cos[y] - π^2}}, {x, -10, 10}, {y, 0, 2}]
```

Out[225]=