

```
import numpy as np

def mc_pitts_neuron(x, w, theta):
    return 1 if np.dot(x, w) >= theta else 0

w_or = np.array([1, 1])
theta_or = 1

for x in [(0, 0), (0, 1), (1, 0), (1, 1)]:
    print(x, mc_pitts_neuron(np.array(x), w_or, theta_or))
print("AJAY ADHIKARI, 1/23/SET/BCS/428")
print("Date:22/01/2026")
```

```
(0, 0) 0
(0, 1) 1
(1, 0) 1
(1, 1) 1
AJAY ADHIKARI, 1/23/SET/BCS/428
Date:22/01/2026
```

```
import numpy as np
```

```
▶ def art_neuron(x,w,b,activation='step'):
```

```
    z=np.dot(x,w)+b
```

```
    if activation == 'step':
```

```
        return 1 if z>=0 else 0
```

```
    elif activation == 'sigmoid':
```

```
        return 1/(1+np.exp(-z))
```

```
    elif activation == 'relu':
```

```
        return max(0,z)
```

```
x = np.array([1,2,3,4])
```

```
w = np.array([0.1,0.2,0.3,0.4])
```

```
b = 0.5
```

```
print('step output',art_neuron(x, w, b, 'step'))
```

```
print("AJAY ADHIKARI, 1/23/SET/BCS/428")
```

```
print("Date:22/01/2026")
```

```
... step output 1
```

```
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```
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```

```
import numpy as np
```

```
def mc_pitts_neuron (x,w,theta):  
    return 1 if np.dot(x,w) > theta else 0
```

```
w_and = np.array([1,1])  
theta_and=2  
for x in [(0,0),(0,1),(1,0),(1,1)]:  
    print(x,mc_pitts_neuron(np.array(x), w_and ,theta_and))  
print("AJAY ADHIKARI, 1/23/SET/BCS/428")  
print("Date:22/01/2026")
```

```
(0, 0) 0
```

```
(0, 1) 0
```

```
(1, 0) 0
```

```
(1, 1) 1
```

```
AJAY ADHIKARI, 1/23/SET/BCS/428
```

```
Date:22/01/2026
```