

**Nolasco Casillas Hector Alejandro.**

**Ing. Mecatrónica 8 A**

**Cinemática de robots.**

**Moran Garabito Carlos Enrique.**

1. **X=90°**%pi/180 x=1.5707963 **Y=30°**%pi/180 y=0.5235988 **Z=70°**%pi/180 z=1.2217305

**X=** [cos (θ), sin(θ),0] [cos(θ),0,-sin(θ),]

[-sin(θ), cos (θ),0] [0, 1, 0]

[0, 0, 1] [sin(θ), 0, cos(θ),]

[cos (θ), -sin(θ),0]

[sin(θ), cos (θ),0]

[0, 0, 1]

**Y=** [cos(x),0,sin(x);0,1,0;-sin(x),0,cos(x)]

**Z=** [1,0,0;0,cos(y),-sin(y);0,sin(y),cos(y)]

**X\*Y\*Z=**

0.2961981 0.1710101 0.9396926

0.8137977 0.4698463 -0.3420201

-0.5 0.8660254 0.

1. **y=75°**%pi/180 y=1.3089969 **x=60°**%pi/180 x=1.0471976

**z=70°**%pi/180 y1 =0.122173

**X=** [cos(z),0,sin(z);0,1,0;-sin(z),0,cos(z)]

**Y=** [1,0,0;0,cos(x),-sin(x);0,sin(x),cos(x)]

**Z=** [cos(y),0,sin(y);0,1,0;-sin(y),0,cos(y)]

**X\*Y\*Z=**

0.1980315 0.1055419 0.974497

0.8365163 0.5 -0.2241439 -0.5109051

0.8595702 0.0107282

1. **y=15°**%pi/180 z1 =0.2617994 **x=35°**%pi/180 x=0.6108652

**z=45°**%pi/180 z=0.7853982

**Y=** [cos(z),-sin(z),0;sin(z),cos(z),0;0,0,1]

**X=** [1,0,0;0,cos(x),-sin(x);0,sin(x),cos(x)]

**Z=** [cos(y),-sin(y),0;sin(y),cos(y),0;0,0,1]

**Y\*X\*Z**=

0.5330975 -0.8329279 0.1484525

0.742504 0.3764785 -0.5540323

0.4055798 0.4055798 0.819152

1. **y=45°**%pi/180 z=0.7853982 **x=35°**%pi/180 x=0.6108652

**z=15°**%pi/180 z1 =0.2617994

**Y=** [cos(z),-sin(z),0;sin(z),cos(z),0;0,0,1]

**X=** [1,0,0;0,cos(x),-sin(x);0,sin(x),cos(x)]

**Z=** [cos(y),-sin(y),0;sin(y),cos(y),0;0,0,1]

**Y\*X\*Z**=

0.5330975 -0.742504 0.4055798

0.8329279 0.3764785 -0.4055798

0.1484525 0.5540323 0.819152