

$$\text{In[28]} := \begin{pmatrix} \cos[\phi] & -\sin[\phi] & 0 \\ \sin[\phi] & \cos[\phi] & 0 \\ 0 & 0 & 1 \end{pmatrix} \cdot \begin{pmatrix} \cos[\theta] & 0 & \sin[\theta] \\ 0 & 1 & 0 \\ -\sin[\theta] & 0 & \cos[\theta] \end{pmatrix} \cdot \begin{pmatrix} \cos[\psi] & -\sin[\psi] & 0 \\ \sin[\psi] & \cos[\psi] & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$\text{Out[28]} = \{ \{ \cos[\theta] \cos[\phi] \cos[\psi] - \sin[\phi] \sin[\psi], \\ -\cos[\psi] \sin[\phi] - \cos[\theta] \cos[\phi] \sin[\psi], \cos[\phi] \sin[\theta] \}, \\ \{ \cos[\theta] \cos[\psi] \sin[\phi] + \cos[\phi] \sin[\psi], \cos[\phi] \cos[\psi] - \cos[\theta] \sin[\phi] \sin[\psi], \sin[\theta] \sin[\phi] \}, \\ \{ -\cos[\psi] \sin[\theta], \sin[\theta] \sin[\psi], \cos[\theta] \} \}$$

$$\text{In[29]} := \begin{pmatrix} \cos[281.004 / 180 * \text{Pi}] & -\sin[281.004 / 180 * \text{Pi}] & 0 \\ \sin[281.004 / 180 * \text{Pi}] & \cos[281.004 / 180 * \text{Pi}] & 0 \\ 0 & 0 & 1 \end{pmatrix} \cdot$$

$$\begin{pmatrix} \cos[94.078 / 180 * \text{Pi}] & 0 & \sin[94.078 / 180 * \text{Pi}] \\ 0 & 1 & 0 \\ -\sin[94.078 / 180 * \text{Pi}] & 0 & \cos[94.078 / 180 * \text{Pi}] \end{pmatrix} \cdot$$

$$\begin{pmatrix} \cos[184.470 / 180 * \text{Pi}] & -\sin[184.470 / 180 * \text{Pi}] & 0 \\ \sin[184.470 / 180 * \text{Pi}] & \cos[184.470 / 180 * \text{Pi}] & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$\text{Out[29]} = \{ \{-0.0629713, -0.979686, 0.190394\}, \\ \{-0.084471, -0.184856, -0.979129\}, \{0.994434, -0.0777398, -0.0711144\} \}$$

$$\text{In[30]} = \{ \{-0.06297127655395479', -0.9796859936586356', 0.19039425453058476'\}, \\ \{-0.08447103667230994', -0.18485637944549319', -0.9791285732434782'\}, \\ \{0.9944341417573467', -0.07773977622424437', -0.07111444930486206'\} \}.$$

$$\text{Out[30]} = \{0.187663, -0.979827, -0.0687141\}$$

$$\text{In[38]} := \text{ArcTan}[-0.9798269137384451 / 0.18766327450338463] / \text{Pi} * 180.0 + 360$$

$$\text{Out[38]} = 280.842$$

$$\text{In[46]} := \text{ArcTan}[-0.06871406193313985' / \text{Sqrt}[0.18766327450338463^2 + (-0.9798269137384451)^2]] / \text{Pi} * 180.0$$

$$\text{Out[46]} = -3.94013$$

$$\text{In[47]} = \{ \{-0.06297127655395479', -0.9796859936586356', 0.19039425453058476'\}, \\ \{-0.08447103667230994', -0.18485637944549319', -0.9791285732434782'\}, \\ \{0.9944341417573467', -0.07773977622424437', -0.07111444930486206'\} \}.$$

$$\text{Out[47]} = \{0.192793, -0.978859, -0.068307\}$$

$$\text{In[48]} := \text{ArcTan}[-0.978859009432796' / 0.19279289077246137'] / \text{Pi} * 180.0 + 360$$

$$\text{Out[48]} = 281.142$$

$$\text{In[49]} := \text{ArcTan}[-0.06830701801962523' / \text{Sqrt}[0.19279289077246137'^2 + (-0.978859009432796')^2]] / \text{Pi} * 180.0$$

$$\text{Out[49]} = -3.91675$$

```
In[53]:= {{-0.06297127655395479', -0.9796859936586356', 0.19039425453058476'},
          {-0.08447103667230994', -0.18485637944549319', -0.9791285732434782'},
          {0.9944341417573467', -0.07773977622424437', -0.07111444930486206'}}.
          {-0.00261799, -0.00261799, 0.9999931}
```

```
Out[53]:= {0.193123, -0.978417, -0.0735139}
```

```
In[60]:= ArcTan[-0.9784167207742006' / 0.19312260711707235'] / Pi * 180.0 + 360
```

```
Out[60]:= 281.166
```

```
In[62]:= ArcTan[-0.07351385529718386' / Sqrt[
          0.19312260711707235'^2 + (-0.9784167207742006')^2]] / Pi * 180.0
```

```
Out[62]:= -4.21584
```

```
In[69]:= {{-0.06297127655395479', -0.9796859936586356', 0.19039425453058476'},
          {-0.08447103667230994', -0.18485637944549319', -0.9791285732434782'},
          {0.9944341417573467', -0.07773977622424437', -0.07111444930486206'}}.
          {-0.00261799, 0.00261799, 0.9999931}
```

```
Out[69]:= {0.187993, -0.979385, -0.0739209}
```

```
In[67]:= ArcTan[-0.9793846250798496' / 0.18799299084799562'] / Pi * 180.0 + 360
```

```
Out[67]:= 280.866
```

```
In[70]:= ArcTan[-0.07392089921069848 / Sqrt[
          0.18799299084799562'^2 + (-0.9793846250798496')^2]] / Pi * 180.0
```

```
Out[70]:= -4.23922
```