The equation for the motion of a link in a robot arm is:

\[ \theta = \Theta \text{ (revoolute + prismatic)} \]

For joint 5, \( \theta = 2 \cdot A \times 1.5 \)

...still not easy...
\[
\frac{2^n \times 2^{n+1}}{2} = 2^n \times 2^{n+1}
\]

or

\[
\frac{2^n \times 2^{n}}{2} = 2^n \times 2^{n+1}
\]

Special Case 2

\[
2^n \times 2^{n+1} = \text{Special Case 2}
\]

Special Case 1

\[
\frac{2^n \times 2^{n+1}}{2} = 2^n \times 2^{n+1}
\]

\[
(2^n_{\text{Intersection}} \cap \text{Outside})^{n+1} = (2^n_{\text{Intersection}} \cap \text{Outside})^{n+1}
\]

Assignment: \[
X^{n+1} = Y^{n+1}
\]
Modeling / Congruent Poses \& \theta \text{ (p) }

\begin{align*}
\text{Kernel (x_n, \theta)} & \text{ (q)} \\
\text{Rot (x_n, \theta)} & \text{ (r)} \\
\text{Trans (0, 0, d)} & \text{ (s)} \\
\text{Trans (z_n, d)} & \text{ (t)} \\
\text{Rot (z_n, \theta)} & \text{ (u)} \\
\text{Trans (1+u, 0)} & \text{ (v)} \\
\text{Rot (1+u, \theta)} & \text{ (w)} \\
\text{Trans (1+u, 0, 0)} & \text{ (x)} \\
\text{Rot (1+u, \theta, 0)} & \text{ (y)} \\
\text{Trans (1+u, 0, 0, d)} & \text{ (z)} \\
\text{Rot (1+u, \theta, 0, d)} & \text{ (a)} \\
\text{Trans (1+u, 0, 0, d)} & \text{ (b)} \\
\end{align*}
\[
\hat{n} = A_1 A_2 A_3 \ldots A_n
\]

\[
\begin{bmatrix}
1 & 0 & 0 & \cdots & 0 \\
0 & \Sigma a_{n+1} & \sigma_{n+1} & \cdots & \sigma_{n+1} \\
\vdots & \ddots & \ddots & \ddots & \vdots \\
0 & \sigma_{n+1} & \Sigma a_{n+1} & \cdots & a_{n+1} \\
0 & \cdots & \cdots & \cdots & 1
\end{bmatrix} = 1 + u \Rightarrow A = 1 + u
\]

---

**Generic Exposition**

\[
\text{trans}(\theta_{n+1}) \times \text{rot}(\theta_{n+1}) \times \text{trans}(\theta_{n+1})
\]

\[
\Rightarrow \hat{n}^{n+1} = A \hat{n}
\]
For know anything (yet) about points 1, 2, then (x, y) can be anything since we
have (x, y, z) ≠ (x, y, z, 1). In this case, the skew
plane φ ≠ frame 1 and normal to
due to φ, rotation of point 1
measures the new position of frame 1.

Before moving
A fixed moving
-simple case of a revolute joint

Ex.
2) Simple case of a prismatic joint.

The constants \(a_1, \phi, \beta_1\) are:

- \(a_1 = \frac{\phi}{\beta_1}\)

As \(a_1\) changes, again, frame \(\phi\) also moves.

\[ \text{Frame } \phi \quad \text{Frame } \phi = \text{Frame } \phi \]

The important quantities are:

- \(a_1\)
- \(\phi\)
- \(\beta_1\)
- \(\phi\)
- \(\beta_1\)
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![Diagram of a mechanical arm with labeled joints and axes](image)

**Top View (Link 2)**