

Liam Godin

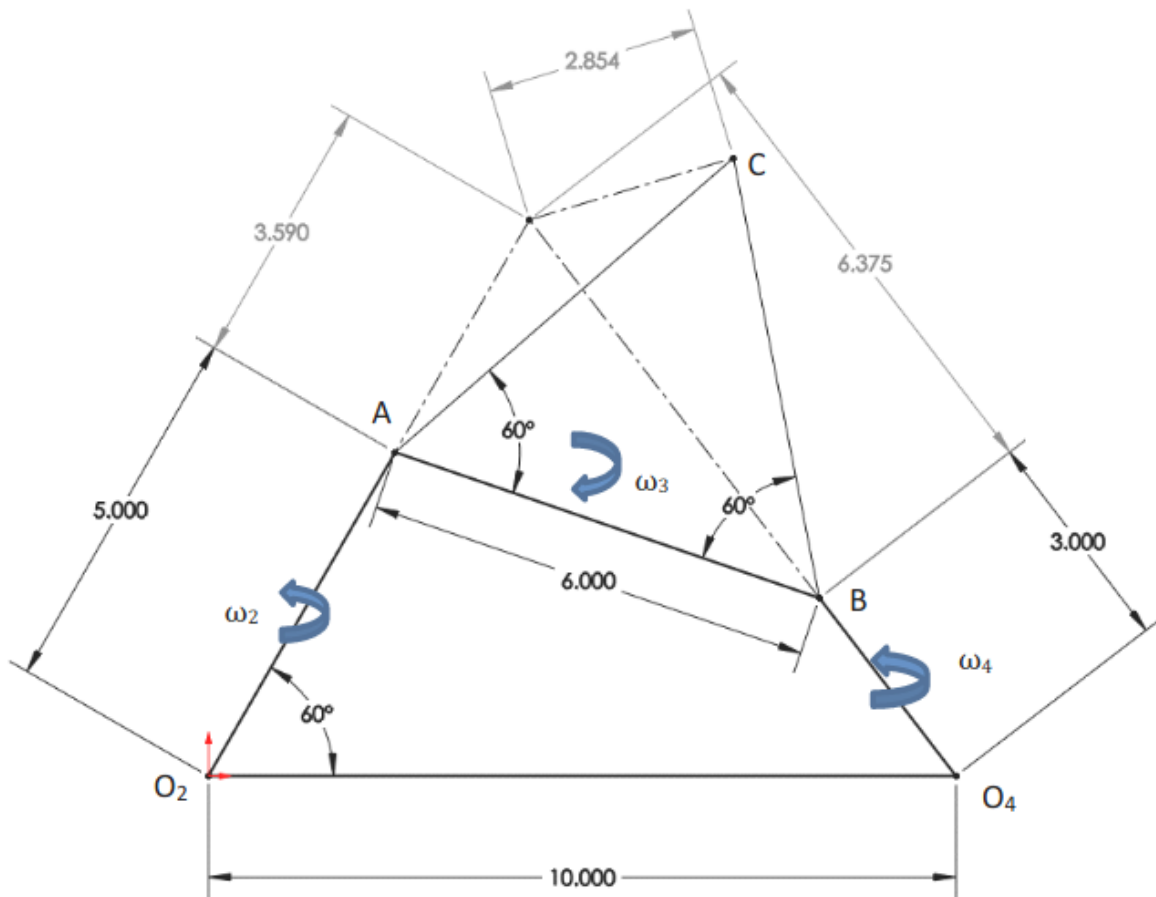
9/22/20

RBE 2001

HW 3

$$\omega_2 = 4 \text{ rad/sec}$$

Lengths are  
in inches.



1.  $V_A$  in inches/sec

$$V_A = (AO_2)\omega_2$$

$$V_A = (5 \text{ in}) * (4 \text{ rad/sec}) = 20.000 \text{ inches/sec}$$

2.  $\omega_3$  in rad/sec

$$\omega_3 = V_A / AI_{1,3}$$

$$\omega_3 = 20 / 3.590 = 5.571 \text{ rad/sec}$$

3.  $V_B$  in inches/sec

$$V_B = (BI_{1,3})\omega_3$$

$$V_B = (6.375) * (5.571) = 35.515 \text{ inches/sec}$$

4.  $\omega_4$  in rad/sec

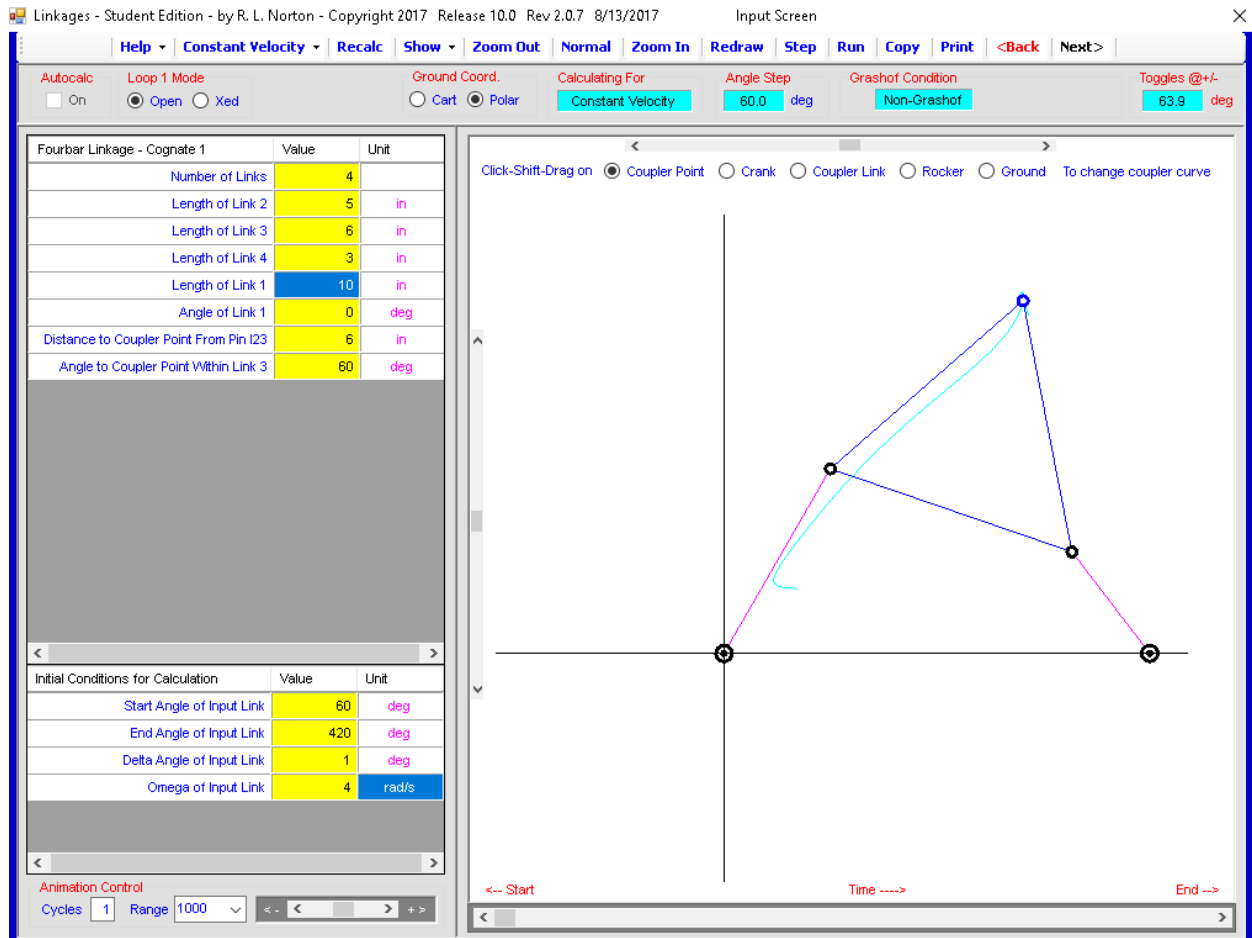
$$\omega_4 = V_B / BO_4$$

$$\omega_4 = 35.515 / 3 = 11.838 \text{ rad/sec}$$

5.  $V_C$  in inches/sec

$$V_C = (CI_{1,3})\omega_3$$

$$V_C = (2.854) * (5.571) = 15.899 \text{ inches/sec}$$



Linkages - Student Edition - by R. L. Norton - Copyright 2017 Release 10.0 Rev 2.0.7 8/13/2017

Print Screen

Print To Screen

Omega3

Ang

3

Omega4

Ang

3

Veloc I 2,3

Mag

3

Veloc I 3,4

Mag

3

Next >

Print Every

1

Set Angle

Dec Pics

3

Set Data

Dec Pics

3

Functions

1

2

4

Coordinate System

Global

Local

Theta magnitudes for all links

Refresh

Current Model Parameters

| Fourbar Linkage | Value | Unit |
|-----------------|-------|------|
| Links           | 4     |      |
| Link 2          | 5.000 | in   |
| Link 3          | 6.000 | in   |
| Link 4          | 3.000 | in   |
| Pivot O4x       | 10.00 | in   |
| Pivot O4y       | 0.00  | in   |
| I23-CplrPt      | 6.000 | in   |
| CplrPtAng3      | 60.00 | deg  |

| Initial Conditions | Value | Unit  |
|--------------------|-------|-------|
| Start              | 60.0  | deg   |
| End                | 420.0 | deg   |
| Delta              | 1.0   | deg   |
| Omega2             | 4.0   | rad/s |

| Input Angle (deg) | Omega3 Ang (deg) | Omega4 Ang (deg) | Veloc I 2,3 Mag (in/sec) | Veloc I 3,4 Mag (in/sec) |
|-------------------|------------------|------------------|--------------------------|--------------------------|
| 60.000            | -5.570           | 11.837           | 20.000                   | 35.512                   |
| 61.000            | -6.468           | 13.645           | 20.000                   | 40.934                   |
| 62.000            | -8.018           | 16.739           | 20.000                   | 50.217                   |
| 63.000            | -11.733          | 24.128           | 20.000                   | 72.384                   |
| 64.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 65.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 66.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 67.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 68.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 69.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 70.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 71.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 72.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 73.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 74.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 75.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 76.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 77.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 78.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 79.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 80.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 81.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 82.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 83.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 84.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 85.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 86.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |
| 87.000            | 0.000            | 0.000            | 0.000                    | 0.000                    |

Omega3 Ang

Max 11.971 deg

Min -11.733 deg

P - P 23.704 deg

Omega4 Ang

Max 24.128 deg

Min -23.909 deg

P - P 48.037 deg

Veloc I 2,3 Mag

Max 20.000 in/sec

Min 0.000 in/sec

P - P 20.000 in/sec

Veloc I 3,4 Mag

Max 72.384 in/sec

Min 0.000 in/sec

P - P 72.384 in/sec

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Design No. 1

09-22-2020 at 21:00:26

File: Model\_1