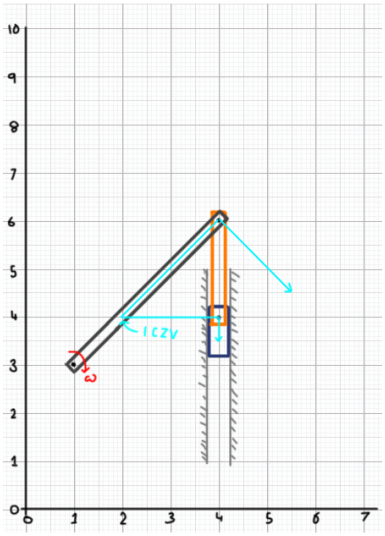
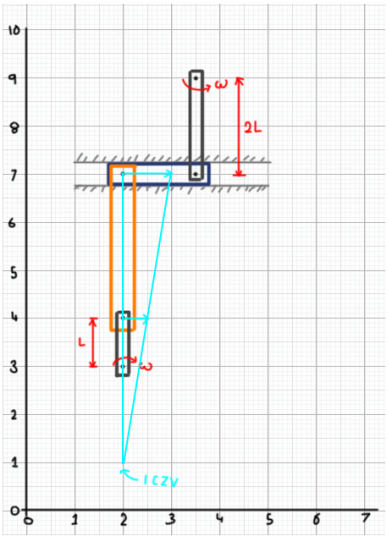
21-R-KM-SS-33

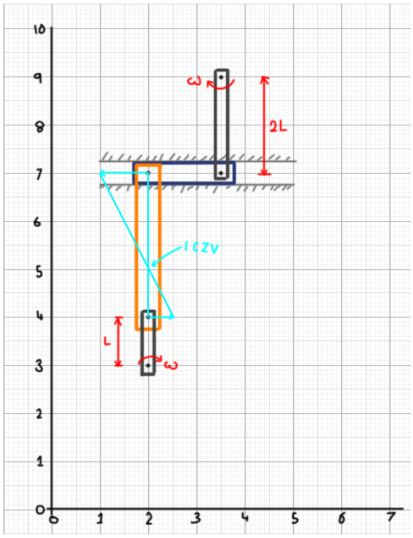
Find the coordinates of the ICZV of the orange member in each of the following cases. Round answers to the nearest integer. Enter 'Inf' if there is no ICZV.

Soluton

Find two points of the orange member of known velocity. Draw a line perpendicular to the vector arrow at the two points. If the arrows are in the same direction, draw an additional arrow connecting the tips of the vector arrows (keep in mind the vector lengths have to be proportional). The ICZV is the point of intersection of the two lines.







A:

$x = 2$

$y = 4$

B:

The velocities at the two known points are in the same direction, so their relative magnitude has to be found. Since $v = \omega \times r$, the point connected to the larger arm has double the velocity as the other point.

$x = 2$

$y = 1$

C:

$x = 2$

$y = 5$