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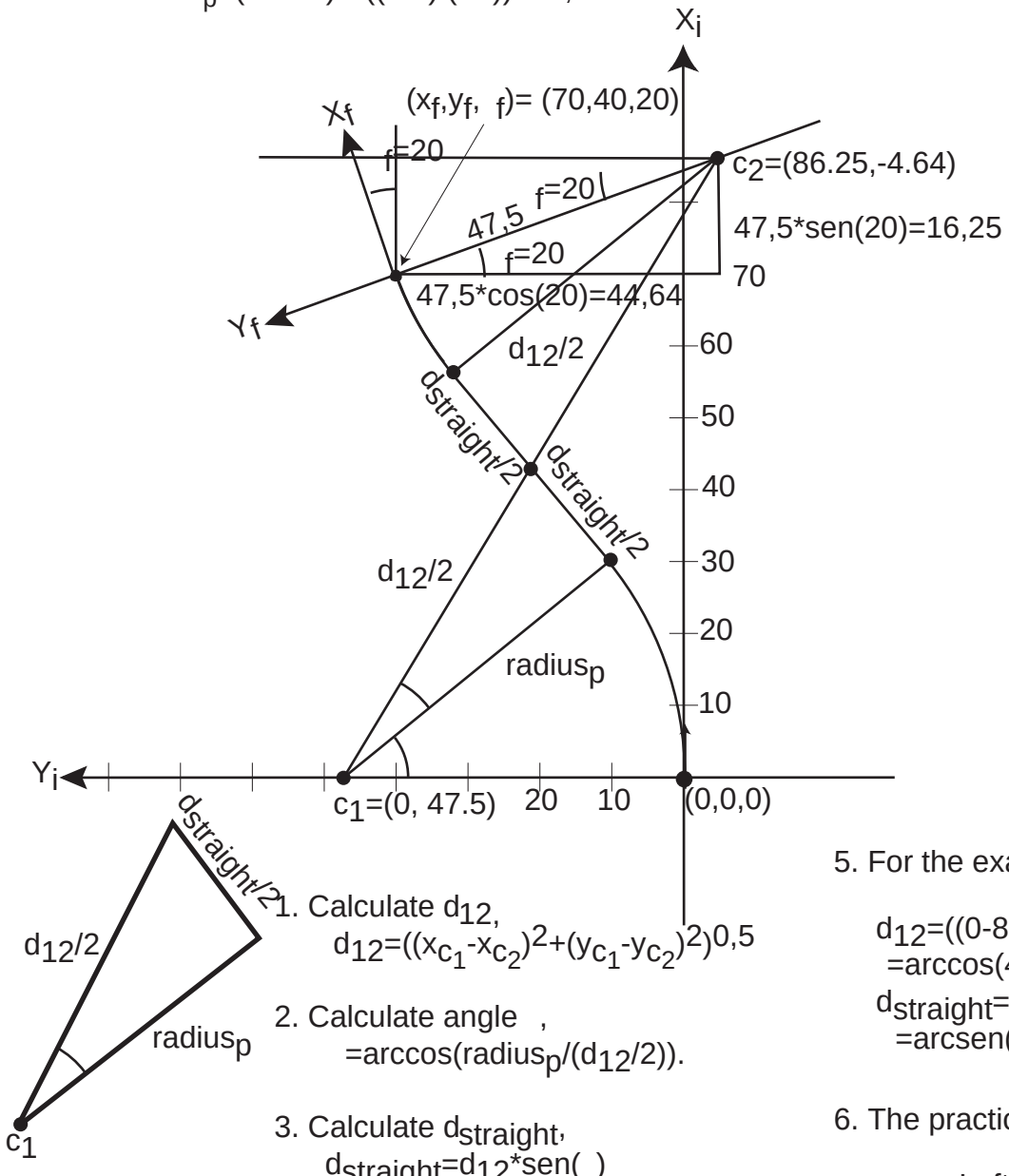
Practical trajectory 2

Considering d_{bw}=9,5cm, v_{robot}=30, v_{min}=15, v_{max}=80, f>1 and $radius_t$=56,93 cm for two curves. First of all, calculate the smaller velocity v_2, after that, truncates v_2 and calculate the pratical radius with zero error and it must be lesser than the theoretical radius.

1. Theoretical values,
   $f=v_1/v_2$= $(radius_t+(dbw/2))/(radius_t - (dbw/2))$ =61,75/52,25=1,18, $v_2=2*v_{robot}-v_1$ =>
   $v_2=2/(f+1)*v_{robot}$=27,52
2. Practical values,
   v_2=27, $v_1=2*v_{robot}-v_1$=33,
   $f=v_1/v_2$=33/27=1,222,
   $radius_p=(dbw/2) * ((f+1)/(f-1))$=47,5



1. Calculate d_{12},
   $d_{12}=((x_{c_1}-x_{c_2})^2+(y_{c_1}-y_{c_2})^2)^{0,5}$

2. Calculate angle ,
   =arccos($radius_p/(d_{12}/2)$).

3. Calculate $d_{straight}$,
   $d_{straight}=d_{12}$*sen( )

4. Calculate angle ,
   =arcsen(x_{c_2}/d_{12})-

. The pratical trajectory is,

curveLeft($radius_p$,),
straight($d_{straight}$),
curveRight($radius_p$, - f).

5. For the example,

$d_{12}=((0-86,25)^2+(47,5+4,64)^2)^{0,5}$=100,79
=arccos(47,5/50,395)= 19,52.
$d_{straight}$=100,79*sen(19,52)=33,68cm
=arcsen(86,25/100,79)-19,52=39,32

6. The practical trajectory is,

curveLeft(47.5, 39.32),
straight(33.68),
curveRight(47.5, 19.32).