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***** Step1 *****

use your answer for omega (1.098) to calculate the carpet velocity vector
at Front Right wheel due to robot rotation around the center of mass.

rad/sec robot rotation around CoM:

(%i1) omega:1.098$

L=wheelbase, W=trackwidth values from problem statement:

(%i2) L:24/12$ W:30/12$

X and Y coordinates of Center of Mass (relative to Center of Geometry)
given in problem statement:

(%i4) Xm:4/12$ Ym:3/12$

X component of carpet motion at FrontRight wheel due to robot rotation:

(%i6) V1x:-omega*(L/2-Ym);
(%o6) -0.8235

Y component of carpet motion at FrontRight wheel due to robot rotation:

(%i7) V1y: omega*(W/2-Xm);
(%o7) 1.0065

***** Step2 *****

combine (vector addition) the carpet velocity due to robot motion
at Front Right wheel (from step1) and the tangential velocity of that wheel
to get the net carpet velocity at that wheel

Front Right wheel speed (fps) given in problem statement:

(%i8) s1:-2$

Front Right wheel steering angle (radians CW) given in problem statement:

(%i9) a1:-0.22983514251446$

X component of s1:

(%i10) s1x:s1*sin(a1);
(%o10) 0.45563400848859
```

Y component of s1:

```
(%i11) sly:s1*cos(a1);  
(%o11) -1.947407931150692
```

X component of net carpet velocity at FrontRight wheel
due to robot rotation and wheel tangential speed:

```
(%i12) Vnet1x:s1x+V1x;  
(%o12) -0.36786599151141
```

Y component of net carpet velocity at FrontRight wheel
due to robot rotation and wheel tangential speed:

```
(%i13) Vnet1y:s1y+V1y;  
(%o13) -0.94090793115069
```

CW angle of net carpet velocity at Front Right wheel:

```
(%i14) ac1:atan2(Vnet1x,Vnet1y);  
(%o14) -2.768895636722363
```