HW15

(1) Find the radius of curvature of $\vec{r} = \langle t^{-1}, t^{-2}, t^{-3} \rangle$ at $t = 1$.

(2) Find the radius of curvature of the curve $y = \sin(x)$ at $x = \pi/2$.

Hint: parametrize using $x = t$ & $z = 0$.

(3) Find the radius of curvature of the helix $\vec{r} = \langle A\cos(Bt), A\sin(Bt), Ct \rangle$ (at all times) assuming A, B, C are positive constants.

(Your answer should be a formula involving A, B, C. The dependence on t "cancels out" after simplification.)