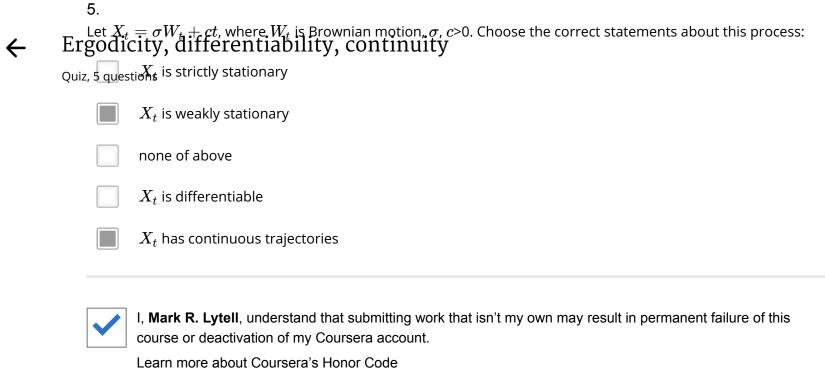
## ← Ergodicity, differentiability, continuity

Quiz, 5 questions

1 point
1.
Let $W_t$ be a Brownian Motion considered at integer time points $t=0,1,2,$ Choose the ergodic processes:
none of above
$lacksquare X_t = Ct + W_t$ , where $C$ is a non-zero constant
$X_t = \xi t + W_t$ , where $\xi \sim N(0,1)$ and $\xi$ is independent of $W_t$ .
1
point
2. Let $X_t=\cos(\omega t+\theta)$ be a stochastic process and $\theta\sim$ Unif[0, $2\pi$ ], $\omega=\pi/10$ . Is this process ergodic? Is it stationary?
It is non-ergodic and weakly stationary
It is ergodic and non-stationary
It is ergodic and weakly stationary
none of above
1
point
3. Let $X_t=arepsilon_t+\xi\cos(\pi t/12)$ , $t=1,2,$ and $arepsilon_1,arepsilon_2,$ be a sequence of i.i.d. random variables. Is the process $X_t$ stationary and ergodic?
$lacksquare X_t$ is weakly stationary and ergodic
$oxed{X_t}$ is weakly stationary and non-ergodic
none of above
1
point
4. Assume that for a process $X_t$ it is known that $\mathbb{E}\left[X_t ight]=lpha+eta t$ , $\mathrm{cov}(X_t,X_{t+h})=e^{-h\lambda}$ ,
for all $h\geq 0$ , $t>0$ , and some constants $\lambda>0$ , $lpha,eta$ . Is the process $X_t$ stationary and ergodic?
none of above
$igwedge X_t$ is non-stationary and ergodic
$lacksquare X_t$ is weakly stationary and ergodic
$oxed{X}_t$ is weakly stationary and non-ergodic

point



Submit Quiz





