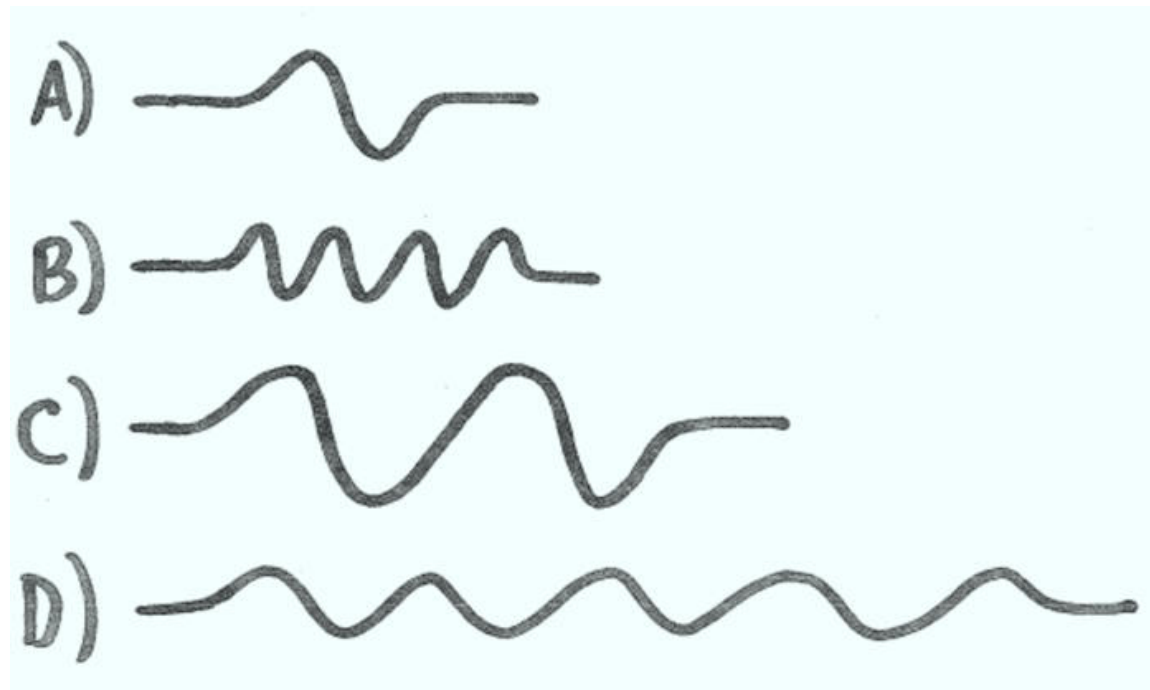
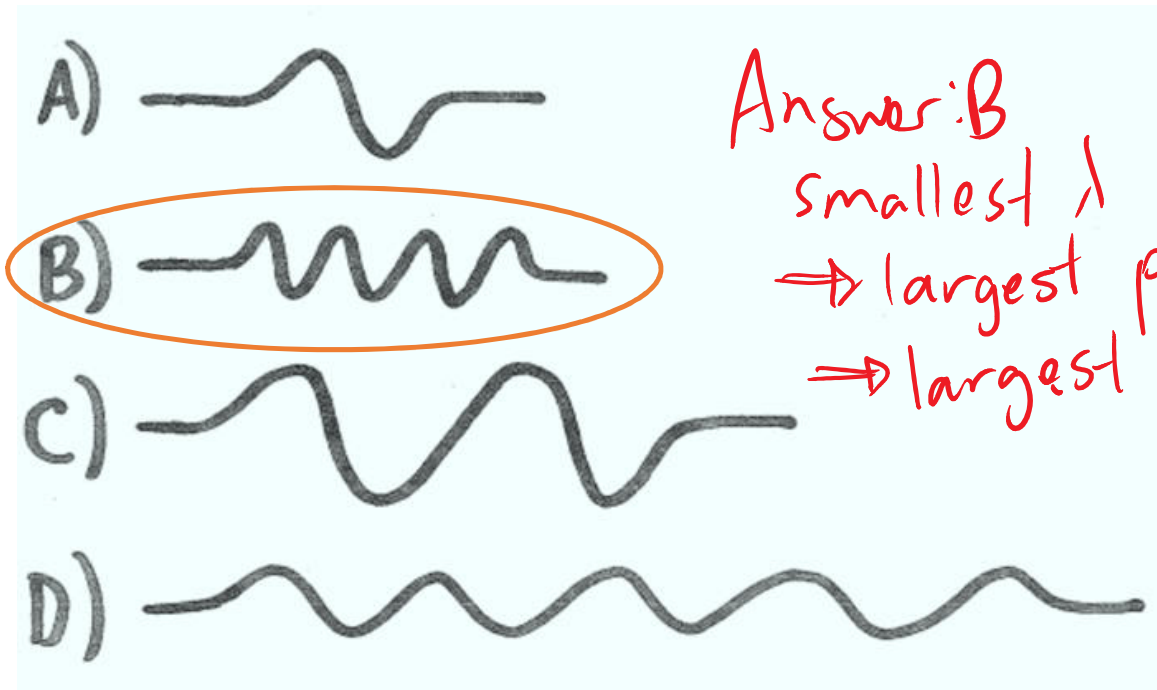
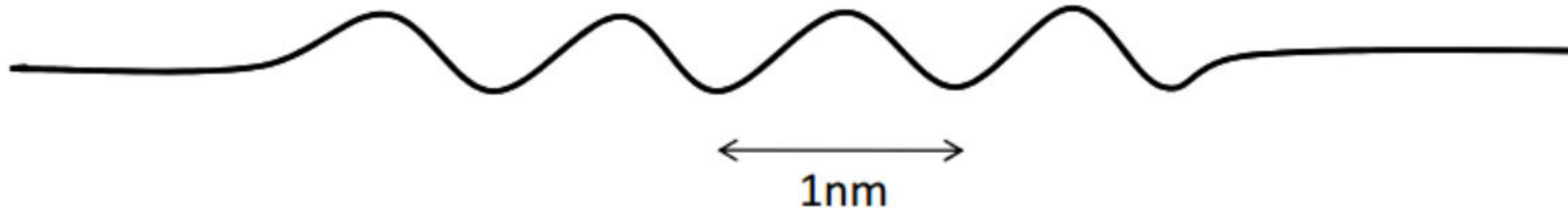


Which of the wavepackets below describes the fastest electron?



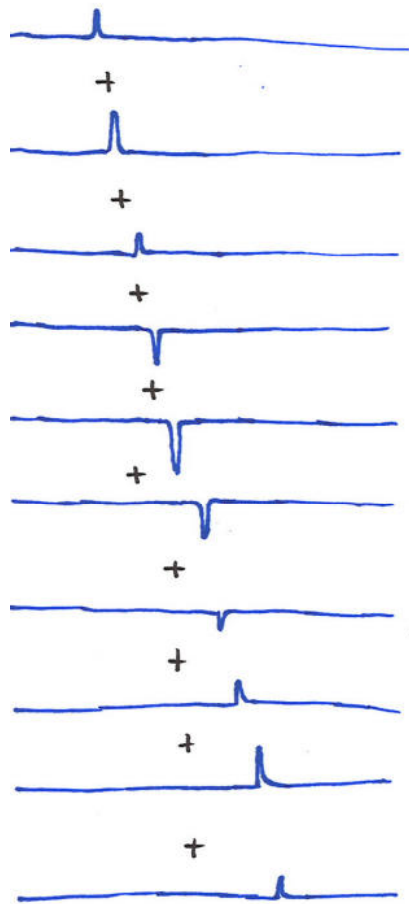
Which of the wavepackets below describes the fastest electron?





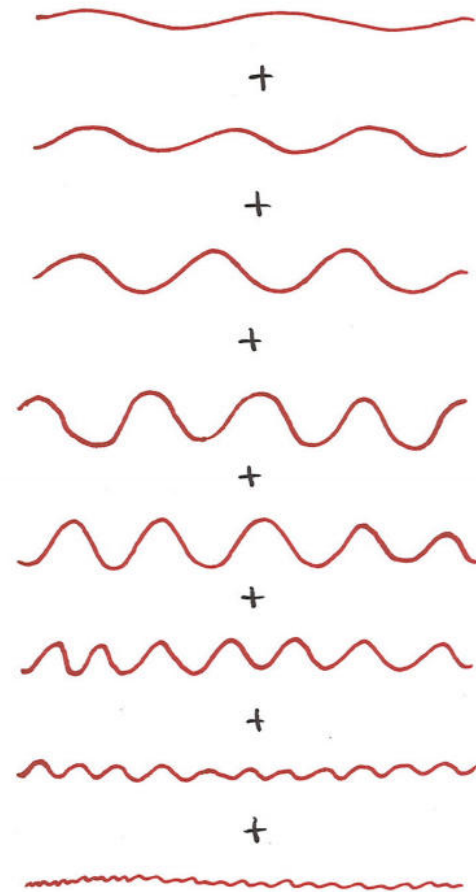
The picture above shows an electron's wavefunction at time $t=0$. What will the wavefunction look like at a slightly later time? Be quantitative if possible.

sum of position eigenstates




$\psi(x)$: amount of eigenstate
w. position x

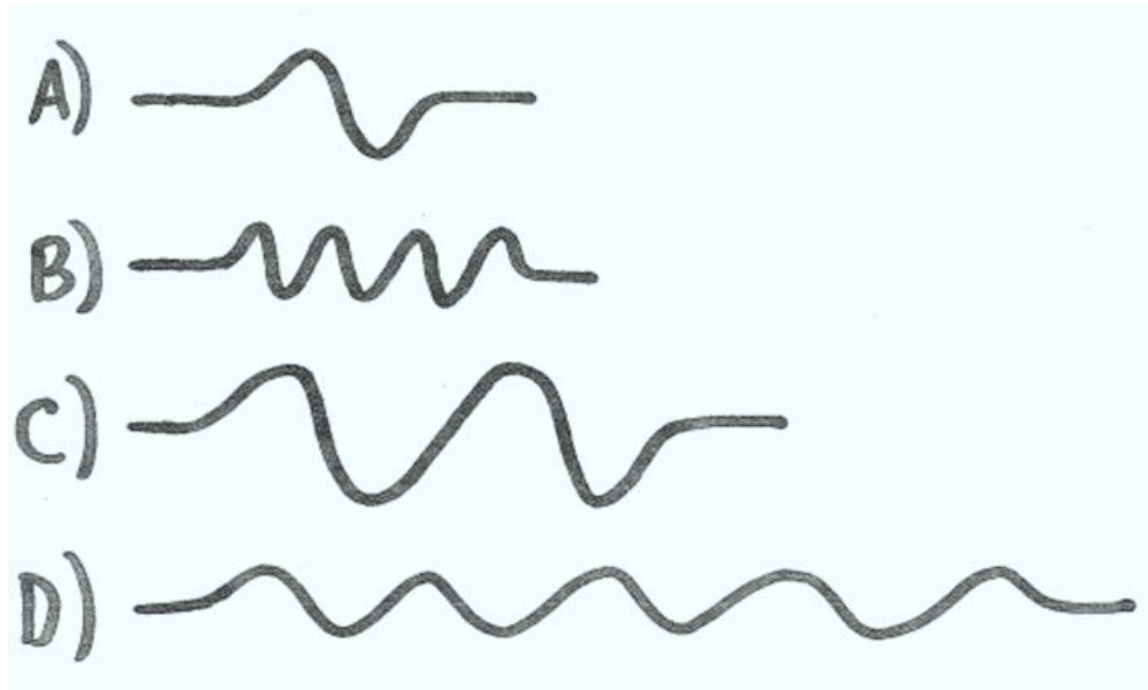
sum of momentum eigenstates



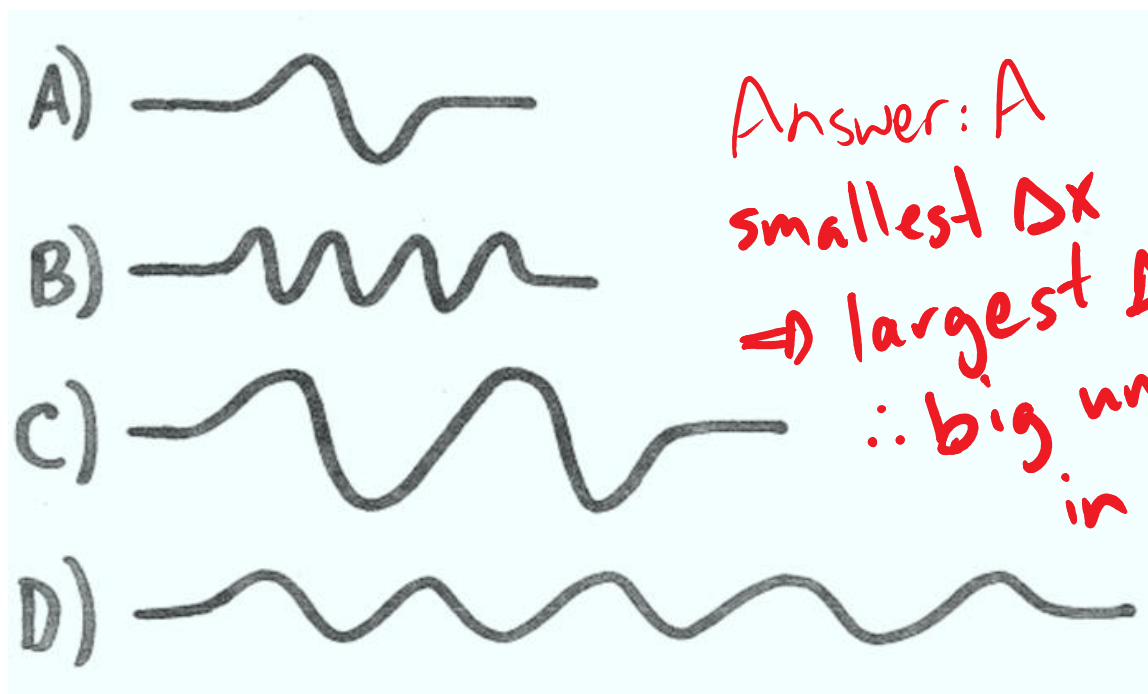
$\chi(p)$: amount of eigenstate
w. momentum p .

=  =
WAVE PACKET

Wavepackets for travelling particles tend to spread out as they move. Which of the wavepackets below will spread out the fastest?



Which of the wavepackets below will spread out the fastest?



Answer: A
smallest Δx
 \Rightarrow largest Δp
 \therefore big uncertainty
in velocity