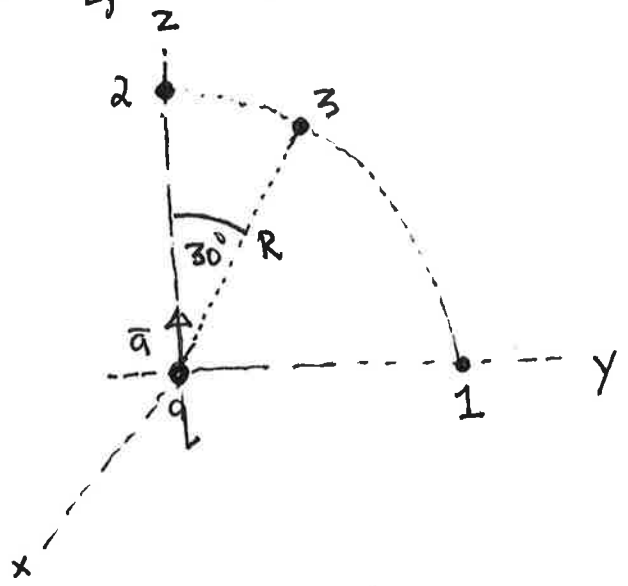
EX 9.1 Consider the radiation emitted from an accelerating charge, as measured at 3 locations a distance R from the charge q, as shown



	Location: 1	2	3
a) Time of arrival	$\frac{R}{c}$	no radiation	R/c
Electric field magnitude	$\frac{qa}{4\pi\epsilon_0 R c^2}$	no electric field	$\frac{qa\sin 30}{4\pi\epsilon_0 R c^2} = \frac{qa}{8\pi\epsilon_0 R c^2}$
Electric field direction	$-\hat{z}$	none	$\cos 30^\circ \hat{y} - \sin 30^\circ \hat{z}$ $= \frac{1}{2}\left(\sqrt{3}\,\hat{y} - 1\,\hat{z}\right)$
b) Magnetic field magnitude	$\frac{qa}{4\pi\epsilon_0 R c^3}$	no magnetic field	$\frac{qa}{8\pi\epsilon_0 R c^3}$
Magnetic field direction	$-\hat{x}$	none	$-\hat{x}$