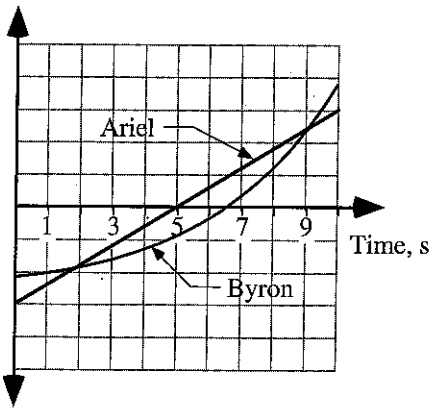
NT3A-QRT21: POSITION TIME GRAPHS OF TWO CHILDREN—KINEMATICS

The graph at right is of the motion of two children, Ariel and Byron, who are moving along a straight hallway. The vertical axis is not labeled.



a) If the vertical axis is position, does either child ever change direction? If so, at what time or times does this change in direction occur?

Explain.

b) If the vertical axis is position, are the two children ever at the same position along the hallway? If so, at what time or times?

Explain.

c) If the vertical axis is position, do the two children ever have the same speed? If so, at what time or times?

Explain.

d) If the vertical axis is position, do the two children ever have the same acceleration? If so, at what time or times?

Explain.

e) If the vertical axis is velocity, do either of the children ever change direction? If so, at what time or times does this change in direction occur?

Explain.

f) If the vertical axis is velocity, do the two children ever have the same velocity? If so, at what time or times?

Explain.

g) If the vertical axis is velocity, do the two children ever have the same acceleration? If so, at what time or times?

Explain.