(a) *x-t* graph

(b) Object's motion

Slope zero: $v_x = 0$
Curvature downward: $a_x < 0$

Slope negative:
$v_x < 0$
Curvature upward:
$a_x > 0$

Slope negative: $v_x < 0$
Curvature zero: $a_x = 0$

Slope positive: $v_x > 0$
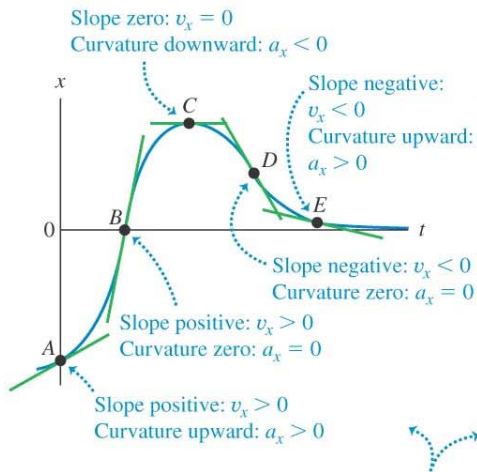Curvature zero: $a_x = 0$

Slope positive: $v_x > 0$
Curvature upward: $a_x > 0$

The greater the curvature (upward or downward) of an object's *x-t* graph, the greater is the object's acceleration in the positive or negative *x*-direction.

$t_A = 0$

Object is at $x < 0$, moving in the $+x$-direction ($v_x > 0$), and speeding up (v_x and a_x have the same sign).

t_B

Object is at $x = 0$, moving in the $+x$-direction ($v_x > 0$); speed is instantaneously not changing ($a_x = 0$).

t_C

Object is at $x > 0$, instantaneously at rest ($v_x = 0$), and about to move in the $-x$-direction ($a_x < 0$).

t_D

Object is at $x > 0$, moving in the $-x$-direction ($v_x < 0$); speed is instantaneously not changing ($a_x = 0$).

t_E

Object is at $x > 0$, moving in the $-x$-direction ($v_x < 0$), and slowing down (v_x and a_x have opposite signs).