|  |
| --- |
| s(t) = position at time t  v(t) = s’(t) = velocity at time t  a(t) = v’(t) = acceleration at time t |

Determine the position, velocity, and acceleration of the given position function.

a. Find the derivatives of position and acceleration

b.    Graph the position, velocity, and acceleration in the same plane

c.     What is the maximum/minimum velocity and maximum/minimum acceleration?

d.      Can you come up with an explanation for the relationship between the points chosen for part (b)?

For example: how does the maximum velocity relate to its position and acceleration?

1.

s(t) = 3x4

a(t)=

v(t)=

Max velocity:

Min velocity:

Max acceleration:

Min acceleration:

2.

s(t)= cos(3x)

a(t)=

v(t)=

Max velocity:

Min velocity:

Max acceleration:

Min acceleration:

3.

s(t)=4x-5

a(t)=

v(t)=

Max velocity:

Min velocity:

Max acceleration:

Min acceleration: