

Particle Motion Practice

The **POSITION** of a moving particle on a coordinate line is given by the function,

$$s(t) = -t^3 - 4t^2 + 60t$$

where t is measured in minutes and $s(t)$ is inches.

The **VELOCITY** of a particle is

$$v(t) = -3t^2 - 8t + 60$$

where t is measured in minutes and $v(t)$ is inches per minute.

The **ACCELERATION** of a particle is

$$a(t) = -6t - 8$$

where t is measured in minutes and $a(t)$ is inches per minute squared.

Answer the following questions about a particle that moves on a horizontal coordinate line.

1. Where does the particle start?
2. When is does the particle stop?
3. Where does the particle stop?
4. When is the particle moving to the right/left?
5. When is the particle speeding up/ slowing down?

The **POSITION** of a moving particle on a coordinate line is given by the function,

$$s(t) = -t^4 + 8t^3$$

where t is measured in minutes and $s(t)$ is inches.

The **VELOCITY** of a particle is

$$v(t) = -4t^3 + 24t^2$$

where t is measured in minutes and $v(t)$ is inches per minute.

The **ACCELERATION** of a particle is

$$a(t) = -12t^2 + 48t$$

where t is measured in minutes and $a(t)$ is inches per minute squared.

Answer the following questions about a particle that moves on a horizontal coordinate line.

1. Where does the particle start?
2. When is does the particle stop?
3. Where does the particle stop?
4. When is the particle moving to the right/left?
5. When is the particle speeding up/ slowing down?

The **POSITION** of a moving particle on a coordinate line is given by the function,

$$s(t) = -t^2 + 22t - 112$$

where t is measured in minutes and $s(t)$ is inches.

The **VELOCITY** of a particle is

$$v(t) = -2t + 22$$

where t is measured in minutes and $v(t)$ is inches per minute.

The **ACCELERATION** of a particle is

$$a(t) = -2$$

where t is measured in minutes and $a(t)$ is inches per minute squared.

Answer the following questions about a particle that moves on a horizontal coordinate line.

1. Where does the particle start?
2. When is does the particle stop?
3. Where does the particle stop?
4. When is the particle moving to the right/left?
5. When is the particle speeding up/ slowing down?

The **POSITION** of a moving particle on a coordinate line is given by the function,

$$s(t) = t^3 - 13t^2$$

where t is measured in minutes and $s(t)$ is inches.

The **VELOCITY** of a particle is

$$v(t) = 3t^2 - 26t$$

where t is measured in minutes and $v(t)$ is inches per minute.

The **ACCELERATION** of a particle is

$$a(t) = 6t - 26$$

where t is measured in minutes and $a(t)$ is inches per minute squared.

Answer the following questions about a particle that moves on a horizontal coordinate line.

1. Where does the particle start?
2. When is does the particle stop?
3. Where does the particle stop?
4. When is the particle moving to the right/left?
5. When is the particle speeding up/ slowing down?