Real World Problems

Date_____

A particle moves along the x-axis given by the position function $x(t) = t^3 - 3t + 3$ where x is in meters, t is in seconds and $t \geq 0$.

1) What is velocity at t=4 seconds?

2) When is the particle at rest?

3) When is the particle moving left or right?

4) What is acceleration when t=1?

5) What is the displacement and total distance on the interval $0 \leq x \leq 5$?

6) When is the particle speeding up and slowing down?

7) Find the velocity when acceleration is 0

A slingshot launches a pebble up vertically given by the position function $x(t) = -4.9t^2 + 100t + 6$ where x is measured in meters and t is measured in seconds.

8) How long does it take for the pebble to reach its max height?

9) What is the pebble's max height?

10) What is the velocity and speed of the object when it hits the ground?

Calculus Name_____ ID: 1

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