

Good afternoon: no warm up today, have your AP packets out when the bell rings. We will go over them in small groups after randomizing seats

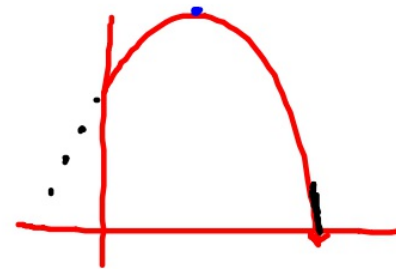
### Reminders

- next assessment will be Wednesday in DS  
(will include D-AD2, D-AD2b, and D-AD4)
- Tutoring/Retakes tomorrow 4-5p
- I am out on Thursday, so go out to lunch/library/Study Hall

A stone is thrown upwards from the top of a cliff so that its position relative to ground level is given by

$$x(t) = 20t - 5t^2 + 25 = 0$$

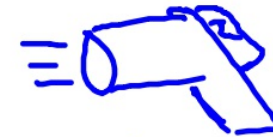
$$t = \underline{\quad}$$



where  $t$  is measured in seconds and  $x$  is measured in metres. The positive direction for position is upwards.

include units in all answers

"radar gun"



a) Find the height of the cliff above ground level.  $x(0) = 25\text{ m}$

b) Find the maximum height above ground level attained by the stone.  $v(t) = 20 - 10t = 0$

c) Find the velocity after 1 second.  $x(2) = 45\text{ m}$

$$v(1) = 10\text{ m/s}$$

$$\frac{dx}{dt} = \frac{20 - 10t}{t = 2} = 0$$

d) Find the velocity when the stone hits the ground.  $v(5) = 20 - 50 = -30\text{ m/s}$

e) What is the acceleration after 1 second? After 3?

$a(t)$  is always  $-10\text{ m/s}^2$

f) What is the stone's initial velocity?

$$v(0) = 20\text{ m/s}$$

Homework:

watch and take guided notes on the video posted to [mcalc.weebly.com](http://mcalc.weebly.com)  
use the graph being handed out, it will show up in the video :)