

ex.1 Get Started P 338

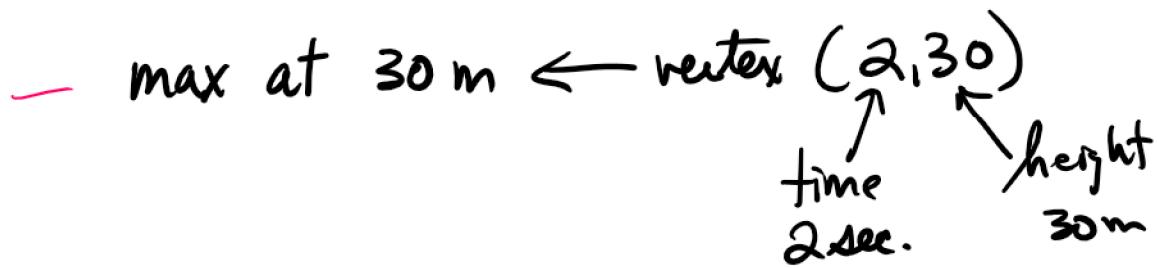
$$h(t) = -4.9t^2 + 20t + 10$$

① what do you know from the equation?

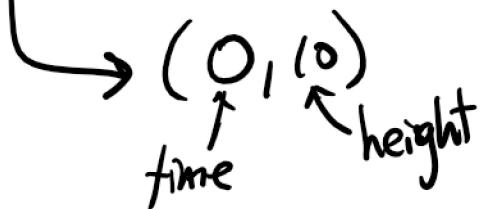
- h-intercept = 10
- opens down  $a = -$  max.
- thin

② what do you know from the graph?

- t intercept = 4.5 s → time for potato to hit ground



- h-intercept = 10 m
- ↑ top of building where potato started



ex. 2 Find 2 numbers whose difference is 12  
and product is a minimum.

(A) choose variables →  $m, b$ (B) diff of 12       $m - b = 12$

(B) diff of 12       $m - b = 12$   
 ✗ isolate 1 variable       $m = 12 + b$  ✗

(C) product is min  
 $P = mb$   
 $P = (12+b)b$   
 $P = b^2 + 12b + 36$

Complete the square

vertex  $(-6, -36)$

$b = -6$

$m = 12 + b$   
 $m = 12 + -6$   
 $m = 6$

Ex. 3 A rectangular field is to be enclosed by 600m of fence. What are the dimensions for a max. area?

Perimeter  $\Rightarrow P = 2(l+w)$   
 $600 = 2(l+w)$   
 $300 = l+w$   
 $300-w = l$

$$\boxed{300 - w = l}$$

Area  $\Rightarrow A = l w$

$$A = (300 - w) w$$

max ??

compl. the sq.

$$A = -w^2 + 300w$$

$$A = -\underline{(w^2 - 300w + 22500 - 22500)}$$

$$A = -(w - 150)^2 + 22500$$

vertex  $(150, 22500)$   
width ↓ Area

$$l = 300 - 150$$

$$l = 150 \text{ m}$$

$$w = 150 \text{ m}$$

P 343 # 3-9 odd

