

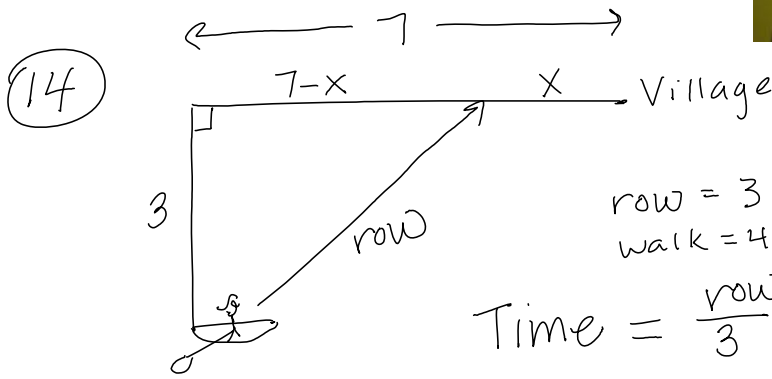
Friday, 11/11, 2016

### 5.3 Graph Practice

### HW Questions

### 5.4 Optimizing - using the calculator

(14)



rate =  $\frac{\text{distance}}{\text{time}}$   
 $\boxed{\text{time} = \frac{\text{dist}}{\text{rate}}}$

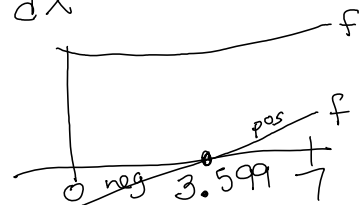
row = 3 mph  
 walk = 4 mph

$$\text{Time} = \frac{\text{row}}{3} + \frac{x}{4}$$

$$\text{Time} = \frac{\sqrt{9 + (7-x)^2}}{3} + \frac{x}{4}$$

minimize time:  $\frac{dT}{dx} = 0$  in Calc

$y_1 = \text{Time eq.}$   
 $y_2 = \frac{dT}{dx}$



$x = 3.599$  is location of min bc  $f'$  changes from - to + there.

$r = 4.536$

Time to row =  $\frac{r}{3} = 1.512$

Time to walk =  $\frac{x}{4} = .900$

$\boxed{\text{Total Time} = 2.411 \text{ hours}}$

