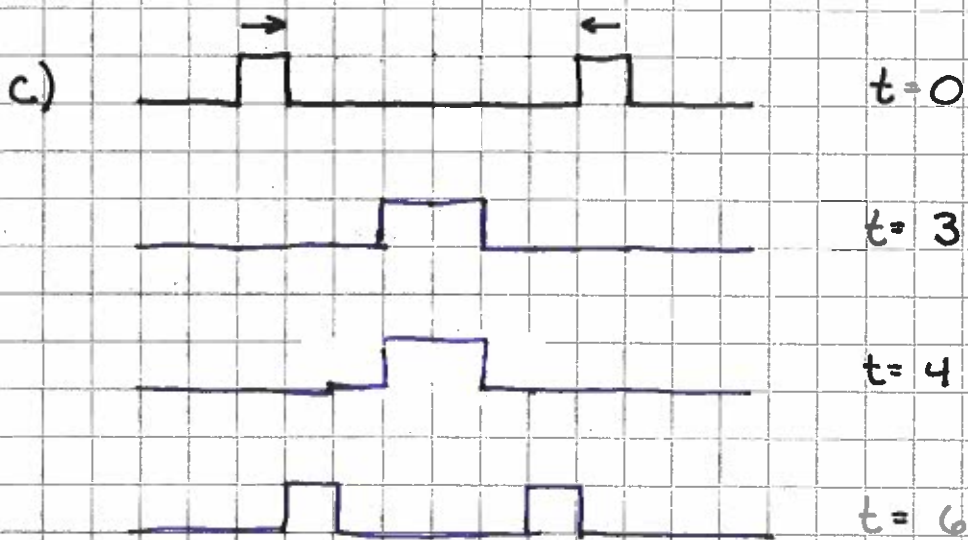
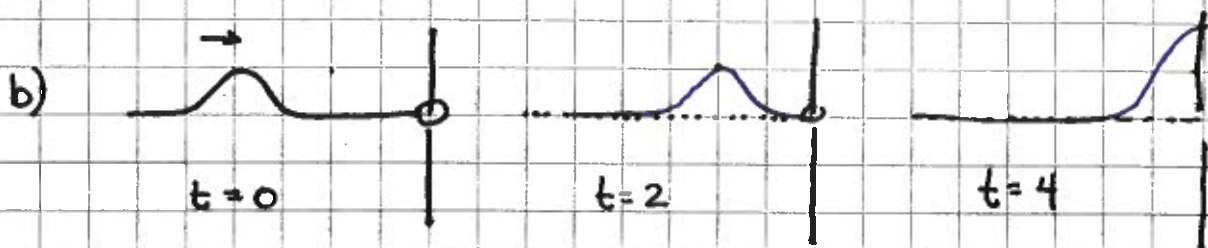
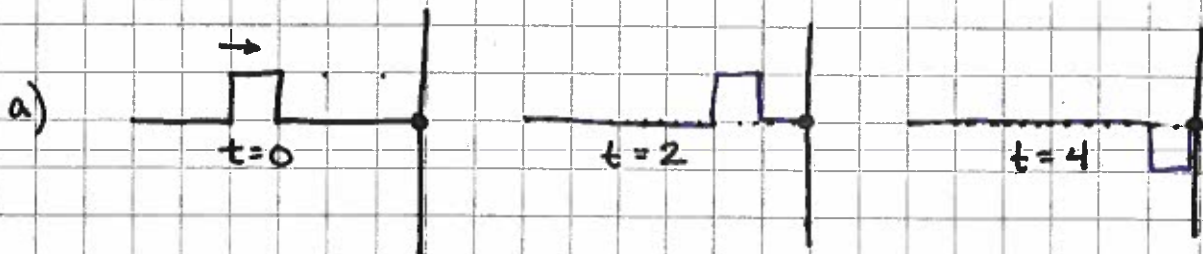
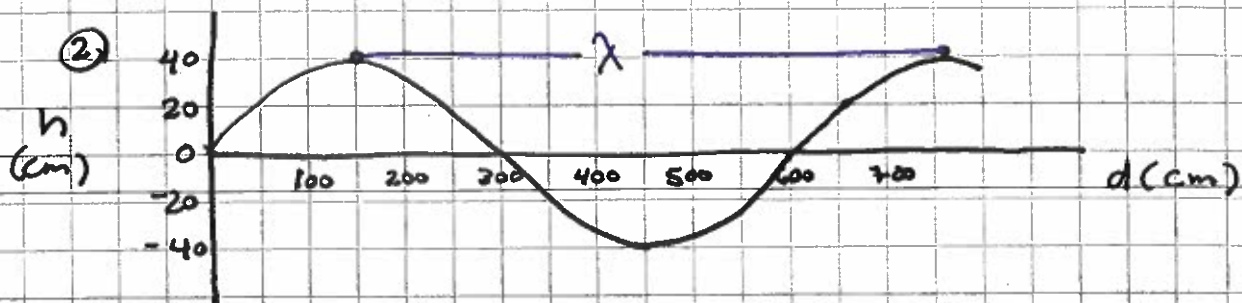


# PHYSICS II FINAL EXAM REVIEW · WAVES

Name: Key

① Draw the progression of the wave as it moves 1 square per second.





a) The wave's amplitude is : 40 cm

b) The wavelength is: 600 cm

c) If the wave's period is 0.5 s, <sup>1 sig fig</sup>  
 its frequency is:  $f = \frac{1}{T} = \frac{1}{0.5 \text{ s}} = 2 \text{ Hz}$

its velocity is:  $v = \lambda f = (600 \text{ cm})(2 \text{ Hz})$   
 $= 1200 \text{ cm/s} = \boxed{10 \text{ m/s}}$

③ A child swinging on a swing goes back and forth 24 times in one minute.

What is their: frequency?  $24 \frac{\text{cycles}}{\text{min}} \left( \frac{1 \text{ min}}{60 \text{ sec}} \right) = \boxed{0.40 \text{ Hz}}$

period?  $\frac{60}{24} \text{ s} = \boxed{2.5 \text{ s}}$

④ An electromagnetic wave travels through vacuum. If its frequency is  $4.1 \times 10^{17} \text{ Hz}$ , what is its wavelength?

$$v = \lambda f \Rightarrow 3.00 \times 10^8 \text{ m/s} = \lambda (4.1 \times 10^{17} \text{ Hz})$$

$$\lambda = 7.3 \times 10^{-10} \text{ m}$$

Bonus - name this wave!