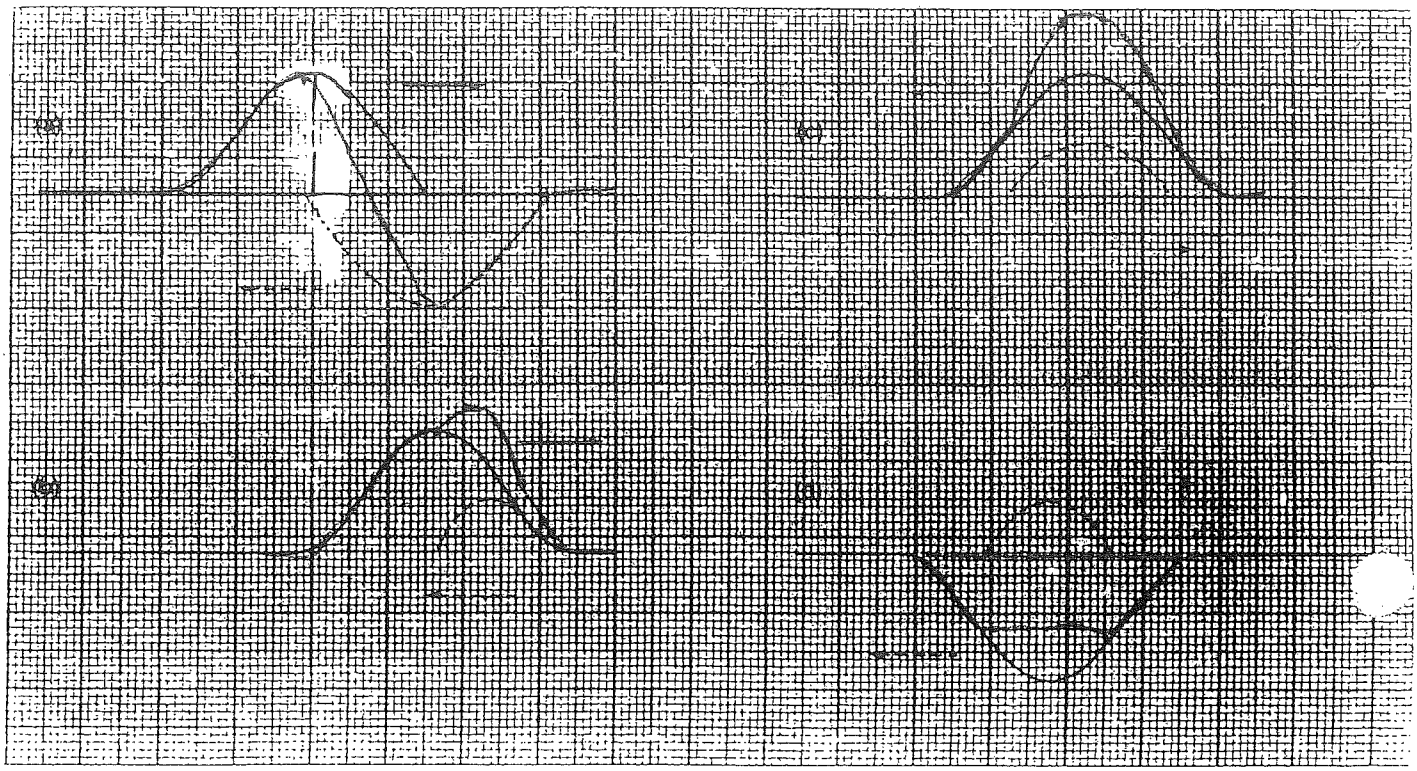
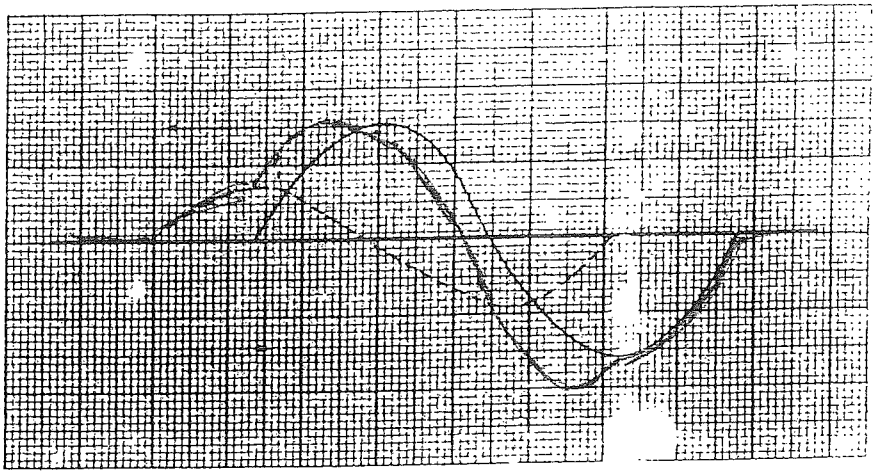
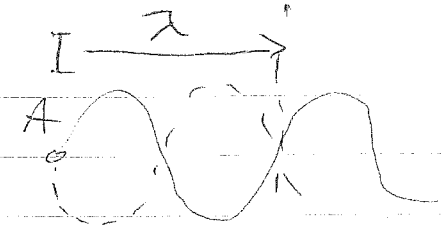
30. Trace the pulses illustrated into your notebook, and determine the resultant displacement of the particles of the medium at each instant, using the Principle of Superposition.

Phys 11 Worksheet - waves intro + superposition



31. Trace the waves illustrated into your notebook and determine their resultant displacement.





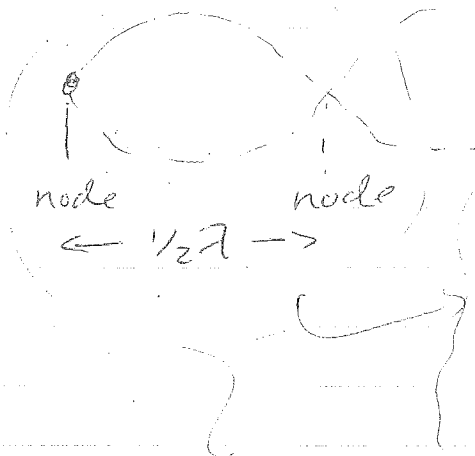

30. (a) $\lambda = 2.6\text{cm}$

(b) $v = \frac{d}{t} = \frac{9.2\text{cm}}{3.0\text{s}}$

$v = 3.1\text{cm/s}$

(c) $f = \frac{v}{\lambda} = \frac{3.1\text{cm/s}}{2.6\text{cm}} = 1.2\text{Hz}$

4.




(a) $\lambda = 2 \times 1.5\,m = \boxed{3.0\,m}$

(b) $\lambda = 2 \times 4.0\,cm = \boxed{8.0\,cm}$

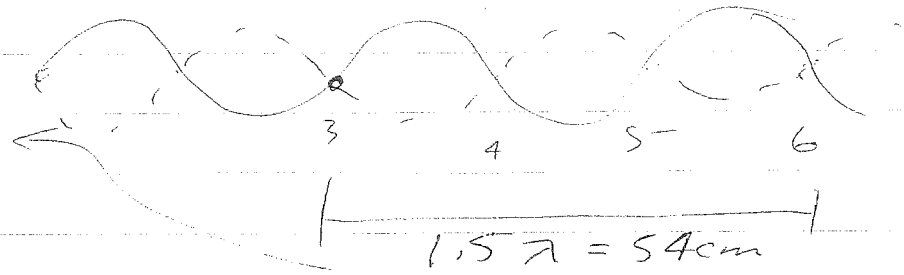
(c) $\lambda = 2 \times 48\,mm = \boxed{96\,mm}$

5. (a) $\lambda = 2 \times 25.0\,cm = \boxed{50.0\,cm}$

(b) $v = f\lambda = (200\,Hz)(50.0\,cm) = 10000\,cm/s$

$\boxed{v = 100\,m/s}$

6. $f = 10.0\,Hz$




(a) $\lambda = \frac{54\,cm}{1.5}$

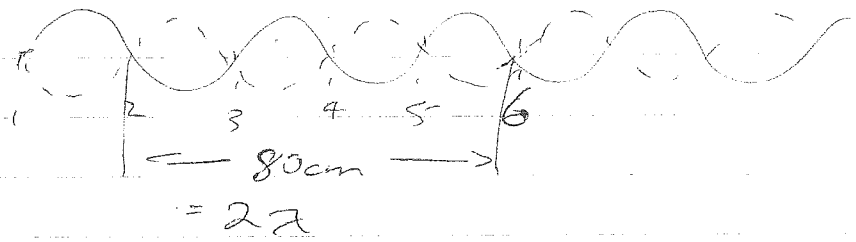
$\boxed{\lambda = 36\,cm}$

(b) $v = f\lambda$

$= (10\,Hz)(36\,cm)$

$\boxed{v = 3.6 \times 10^2\,cm/s = 3.6\,m/s}$

7. $v = 6.0\,m/s$




$\lambda = \frac{80\,cm}{2}$

$\boxed{\lambda = 40\,cm}$

$f = \frac{v}{\lambda} = \frac{6.0\,m/s}{0.4\,m}$

$\boxed{f = 15\,Hz}$