Waves Worksheet #1

① $v = f\lambda$

$350\ m/s = (440\ Hz)\lambda$

$\lambda = 0.8\ m$

② $v = f\lambda$

$331\ m/s = (2.5 \times 10^4\ Hz)\lambda$

$\lambda = 0.013\ m$

③ $v = f\lambda$

$331\ m/s = (20\ Hz)\lambda$

$\lambda = 16.55\ m$

④ $v = f\lambda$

$4\ m/s = f(2.5\ m)$

$f = 1.6\ Hz$

$T = \frac{1}{f}$

$= \frac{1}{1.6\ Hz}$

$T = 0.625\ s$

⑤ $v = f\lambda$

$2.42 \times 10^4\ m/s = f(1.10\ m)$

$f = 22\,000\ Hz$

$T = 4.55 \times 10^{-5}\ m$

⑥ $v = f\lambda$

$(346\ m/s) = f(10.6\ m)$

$f = 32.6\ Hz$

(7) $v = f\lambda$

$1.94 \times 10^{8}\ m/s = f(5.89 \times 10^{-7}\ m)$

$f = \underline{3.29 \times 10^{14}\ Hz}$

(8) $v = f\lambda$

$7.0\ m/s = f(14\ m)$

$f = 0.5\ Hz$

$T = \frac{1}{f} = \frac{1}{.5\ Hz} = \underline{2\ s}$

(9) $v = f\lambda$

$= 60\ Hz\ (85.5\ m)$

$= \underline{5130\ m/s}$

(10) (a) $v = f\lambda$

$8000\ m/s = (.050\ Hz)\lambda$

$\underline{\lambda = 160\,000\ m}$

(b) $v = f\lambda$

$4600\ m/s = f(2.3 \times 10^{4}\ m)$

$\underline{f = 0.196\ Hz}$