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$$1. \quad f = \frac{375}{3.00 \text{ s}} = 125 \text{ s}^{-1} = 125 \text{ Hz}$$

$$\boxed{f = 125 \text{ Hz}}$$

$$T = \frac{1}{f} = \frac{1}{125 \text{ s}^{-1}} = 0.008 \text{ s} = 8 \times 10^{-3} \text{ s}$$

$$\boxed{T = 8.00 \times 10^{-3} \text{ s}}$$

$$2. \quad \begin{array}{l} f = 2.00 \text{ Hz} \\ v = 5.40 \text{ m/s} \end{array} \quad \lambda = ?$$

$$v = \lambda f$$

$$\lambda = \frac{v}{f} = \frac{5.40 \text{ m/s}}{2.00 \text{ s}^{-1}} = 2.70 \text{ m}$$

$$\boxed{\lambda = 2.70 \text{ m}}$$

$$3. \quad \begin{array}{l} f = 440 \text{ Hz} \\ v = 350 \text{ m/s} \end{array} \quad \lambda = ?$$

$$\lambda = \frac{v}{f} = \frac{350 \text{ m/s}}{440 \text{ s}^{-1}} = 0.80 \text{ m}$$

$$\boxed{\lambda = 0.80 \text{ m}}$$

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$$4. a. f = \frac{4800}{\text{min}} \left(\frac{1 \text{ min}}{60 \text{ s}} \right) = 80 \text{ Hz}$$

$$\boxed{f = 80 \text{ Hz}}$$

b.

$$T = \frac{1}{f} = \frac{1}{80 \text{ s}^{-1}} = 0.013 \text{ s} = 1.3 \times 10^{-2} \text{ s}$$

$$\boxed{T = 1.3 \times 10^{-2} \text{ s}}$$

$$5. a. A = 0.5 \text{ cm} = 5 \times 10^{-3} \text{ m}$$

$$\boxed{A = 5 \times 10^{-3} \text{ m}}$$

$$b. \lambda = \frac{19 \text{ cm}}{3 \text{ (cycles)}} = 6.3 \text{ cm} = 6.3 \times 10^{-2} \text{ m}$$

$$c. f = 20 \text{ Hz} \quad v = ?$$

$$v = \lambda f = (6.3 \times 10^{-2} \text{ m}) (20 \text{ s}^{-1}) = 1.27 \text{ m/s}$$

$$\boxed{v = 1.27 \text{ m/s}}$$

6. a. These waves are sinusoidal,

b. smallest $T \rightarrow$ wave E,

c. E-D-C-B-A

d. smallest $f \rightarrow$ wave A.

e. A-B-C-D-E