



Estimate the number of seconds in one day.

$24 \text{ hr} \times \frac{3600 \text{ s}}{\text{hr}} \approx$

$25 \times 3600$  is  $1/4 \times 100 \times 3600 = 90,000$  sec. Of course the exact answer is 3600 s less than what we calculated, because 24 is less than 25.

Solve the following:

$26 \text{ s} \times \frac{\text{degree}}{3600 \text{ s}} \times \frac{\pi}{180^\circ} \times 250 \text{ mm} \approx$

$\frac{27}{3600} \times \frac{1}{60} \times 250 = \frac{3}{400} \times \frac{25}{6} = \frac{75}{24} \times 10^{-2} = 3.125 \times 10^{-2} \text{ mm}$

Solve the following:  $\frac{1}{24} = \frac{1}{30} + \frac{1}{f}$

Since six is the largest common denominator of 24 and 30, lets multiply by six.

$\frac{1}{4} = \frac{1}{5} + \frac{6}{f} \rightarrow 0.25 = 0.20 + 6/f \rightarrow 0.05 = 6/f \rightarrow f = 60/0.5 = 120$

Solve the following:  $\frac{6.6 \times 10^{-34} \text{ Js} \times 3 \times 10^8 \text{ m/s}}{3.6 \times 10^{-19} \text{ J}} = (< 2) (3) \times 10^{-7} = < 6 \times 10^{-7} \text{ m}$