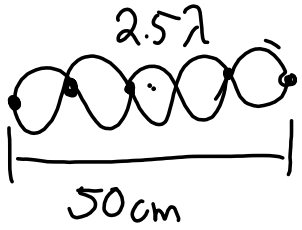
- The distance between two successive nodes in a vibrating string is ½λ
- The point of maximum displacement from a node is ¼λ

Examples

1. What is the wave speed of a standing with containing 2.5 waves in 50 cm and waves are created 62 times each second?



$2.5\lambda = 50$

$\lambda = \frac{50}{2.5}$

$\lambda = 20\,cm$

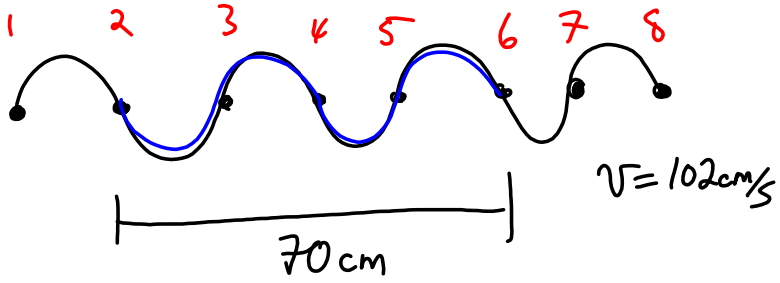
$f = 62\,Hz$

$v = f\lambda$

$= (62)(20)$

$v = 1240\,cm/s$

2. A standing wave pattern contains 8 nodes (with a node at the beginning and end) The distance between the second and 6th node 70 cm. The wave speed is 102 cm/s. What is the frequency of the traveling waves?



$v = 102\,cm/s$

contains 2 waves

$2\lambda = 70$

$\lambda = 35\,cm$

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$v = f\lambda$

$102 = f(35)$

$\frac{102}{35} = f$

$2.9\,Hz = f$