Waves Formula Review Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A wave has a velocity of 7.4 m/s and a frequency of 34 Hz. What is the wavelength of the wave?



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| Formula: | Plug in numbers: | Answer: |

2. A transverse wave is traveling with a wavelength of .04 m and at a frequency of 12 Hz. What is the speed of the wave?



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| Formula: | Plug in numbers: | Answer: |



3. A wave is traveling at 8 m/s and has a is .025 m from crest to crest. How many cycles per second is the wave traveling?



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| Formula: | Plug in numbers: | Answer: |

4. Using the frequency from question #3, what is the wave’s period?



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| Formula: | Plug in numbers: | Answer: |

5. A wave has a period of 1.4 s. What is the wave’s frequency?

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| Formula: | Plug in numbers: | Answer: |

6. On Earth, a pendulum is swinging with a period of 1.5 seconds. What is the length of the pendulum?



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| Formula: | Plug in numbers: | Answer: |

7. Bananas are placed on a spring scale to weigh them. The mass of the bananas is .37 kg. The spring has a spring constant of 415 N/m. What is the distance that the spring stretched?



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| Formula: | Plug in numbers: | Answer: |

8. The use the information from problem #7 to find the potential energy of the spring.

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| Formula: | Plug in numbers: | Answer: |

9. A guitar has a string that is 1.2 meters long. As it is strummed, it causes a standing wave. What is the wavelength of the wave if the string is vibrating in the 5th harmonic?



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| Formula: | Plug in numbers: | Answer: |



10. An ambulance is coming closer to the observer. If the ambulance is going 34 m/s and the frequency of the siren is 450 Hz, what is the frequency that is observed by the person? (Speed of sound is 340 m/s)



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| Formula: | Plug in numbers: | Answer: |

11. The ambulance in number 10 is now going away from the observer. What is the frequency the observer hears as the ambulance is leaving?

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| Formula: | Plug in numbers: | Answer: |