



Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

1 In a demonstration, a vibrating tuning fork causes a nearby second tuning fork to begin to vibrate with the same frequency. Which **wave phenomenon** is illustrated by this demonstration?

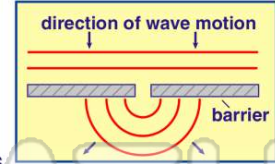
- A the Doppler effect
- B nodes
- C resonance
- D interference



2 The diagram below shows wave fronts spreading into the region behind a **barrier**.

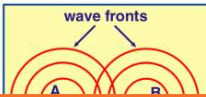
Which **wave phenomenon** is represented in the diagram?

- A reflection
- B refraction
- C diffraction
- D standing waves



3 The diagram below represents the wave pattern produced by two sources located at points A and B. Which **phenomenon** occurs at the **intersections** of the circular wave fronts?

- A diffraction
- B interference



4 A radar gun can determine the speed of a moving automobile by **measuring the difference in frequency** between emitted and reflected radar waves. This process illustrates

- A resonance
- B the Doppler effect



5

A  
h  
V  
P  
A  
E  
C  
D



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7

- A diffraction
- B Doppler effect
- C reflection
- D refraction



- B the same frequency, the same amplitude, and travel in opposite directions
- C the same frequency, different amplitudes, and travel in the same direction
- D the same frequency, different amplitudes, and travel in opposite directions

9

As a sound wave passes from **water**, where the speed is  $1.49 \times 10^3$  meters per second, into **air**, the **wave's speed**

- A decreases and its frequency remains the same
- B increases and its frequency remains the same
- C remains the same and its frequency decreases
- D remains the same and its frequency increases

10

Which phenomenon occurs when an object **absorbs wave energy** that **matches** the object's **natural frequency**?

- A reflection
- B diffraction
- C resonance
- D interference



## ANSWER KEY

In a demonstration, a vibrating tuning fork causes a nearby second tuning fork to begin to vibrate with the same frequency. Which **wave phenomenon** is illustrated by this demonstration?

- A the Doppler effect
- B nodes
- C resonance
- D interference

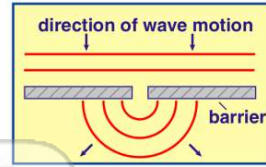


(C)

The diagram below shows wave fronts spreading into the region behind a **barrier**.

Which **wave phenomenon** is represented in the diagram?

- A reflection
- B refraction
- C diffraction
- D standing waves

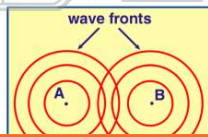


(C)

The diagram below represents the wave pattern produced by two sources located at points A and B.

Which **phenomenon** occurs at the **intersections** of the circular wave fronts?

- A diffraction
- B interference
- C refraction
- D



(b)

A radar gun can determine the speed of a moving automobile by **measuring the difference in frequency** between emitted and reflected radar waves. This process illustrates

- A resonance
- B the Doppler effect
- C diffraction
- D



(b)



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- B Doppler effect
- C reflection
- D refraction



- and travel in opposite directions
- C the same frequency, different amplitudes, and travel in the same direction
- D the same frequency, different amplitudes, and travel in opposite directions

As a sound wave passes from **water**, where the speed is  $1.49 \times 10^3$  meters per second, into **air**, the **wave's speed**

- A decreases and its frequency remains the same
- B increases and its frequency remains the same
- C remains the same and its frequency decreases
- D remains the same and its frequency increases

(a)

Which phenomenon occurs when an object **absorbs wave energy** that **matches** the object's **natural frequency**?

- A reflection
- B diffraction
- C resonance
- D interference

(c)