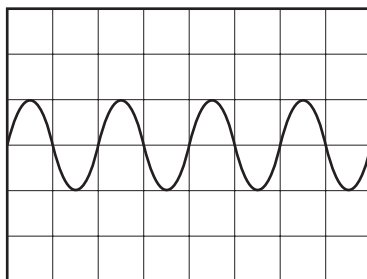


- 4 A whale produces sound waves of frequency 5 Hz. The waves are detected by a microphone and displayed on an oscilloscope.



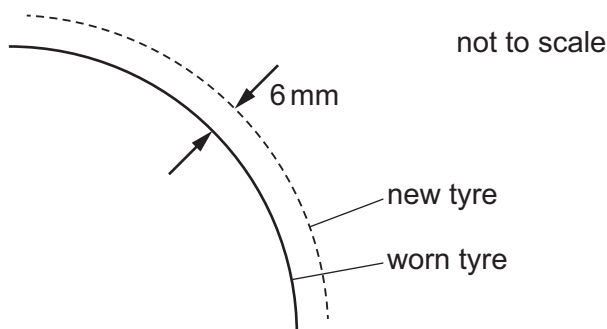
What is the time-base setting on the oscilloscope?

- A** 0.1 ms div^{-1} **B** 1 ms div^{-1} **C** 10 ms div^{-1} **D** 100 ms div^{-1}
- 5 The speed shown on a car's speedometer is proportional to the rate of rotation of the tyres.

The variation of the diameter of a tyre as it wears introduces an error in the speed shown on the speedometer.

A car has new tyres of diameter 600 mm. The speedometer is accurately calibrated for this diameter.

The tyres wear as shown, with 6 mm of material being removed from the outer surface.



What is the error in the speed shown on the speedometer after this wear has taken place?

- A** The speed shown is too high by 1%.
B The speed shown is too high by 2%.
C The speed shown is too low by 1%.
D The speed shown is too low by 2%.