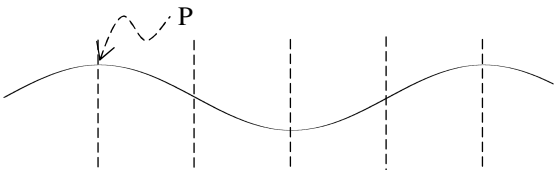
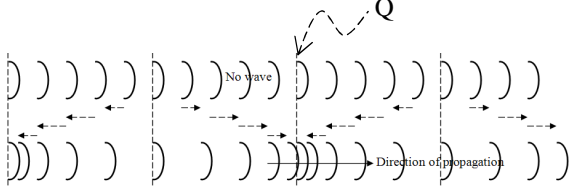

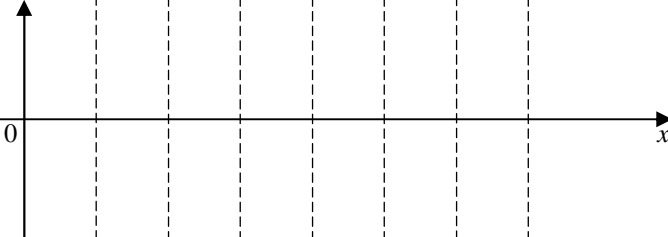
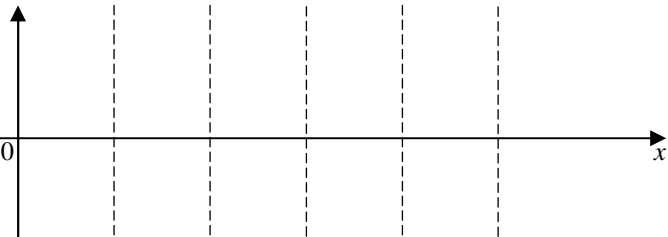
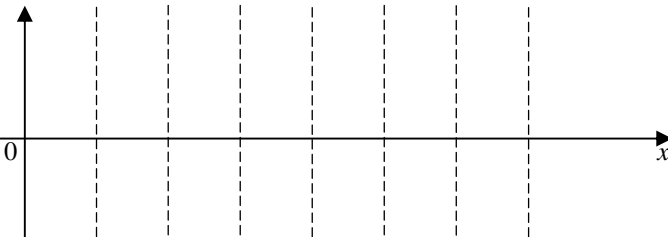



Physics worksheet – Transverse and longitudinal waves

<p>Q1 State the difference between a transverse wave and a longitudinal wave.</p>	<p>Q2 Write T for transverse and L for longitudinal next to each of the following waves.</p> <p>microwaves surface water waves light gamma rays sound waves in the air X-rays waves in a rope sound waves in water</p>
<p>Q3 The following picture has a scale of 1:20. It shows a section of a long rope with a wave travelling to the right. From the picture and with the help of a ruler find (i) the amplitude and (ii) the wavelength of the wave.</p> 	<p>Q4 The following pictures have a scale of 1:20. The first picture shows a section of a stretched slinky spring. The second picture shows a wave travelling to the right in that section. From the pictures and with the help of a ruler estimate (i) the amplitude and (ii) the wavelength of the wave.</p> 
<p>Q5 Refer to the wave in Q3. Draw a graph of particle (of the rope) displacement vs distance from the origin. Take the left end of the section as the origin.</p> 	<p>Q6 Refer to the wave in Q4. Draw a graph of particle (of the slinky spring) displacement vs distance from the origin. Take the left end of the section as the origin.</p> 
<p>Q7 The wave in Q3 has a period of 0.5 s. Calculate the frequency and the speed of the wave.</p>	<p>Q8 The wave in Q4 has a frequency of 0.8 Hz. Calculate the period and the speed of the wave.</p>
<p>Q9 The picture of the wave in Q3 was taken at $t = 0$ s. Draw a graph of particle displacement vs distance from the origin for the wave at $t = 0.125$ s.</p> 	<p>Q10 The picture of the wave in Q4 was taken at $t = 0$ s. Draw a graph of particle displacement vs distance from the origin for the wave at $t = 0.625$ s.</p> 
<p>Q11 The picture of the wave in Q3 was taken at $t = 0$ s. Draw a graph of displacement of particle P vs time from $t = 0$ to $t = 1$ s.</p> 	<p>Q12 The picture of the wave in Q4 was taken at $t = 0$ s. Draw a graph of displacement of loop Q vs time from $t = 0$ to $t = 2.5$ s.</p> 