

Answer and explanation	Syllabus content, outcomes and targeted performance bands
<p>Question 8 C</p> <p>C is correct. In a negation statement, the phrases ‘there exist’ and ‘for all’ must be interchanged, ‘and’ and ‘or’ must be interchanged, ‘=’ must change to ‘≠’ and ‘>’ must change to ‘≤’.</p> <p>A, B and D are incorrect. These options do not show an accurate negation of the statement.</p>	<p>MEX–P1 The Nature of Proof MEX12–2, 12–8 Band E2</p>
<p>Question 9 C</p> <p>C is correct. This option is the contrapositive of the original statement. As the contrapositive of a statement ‘A implies B’ is ‘not B implies not A’, this option is the contrapositive of the original statement and, hence, is logically equivalent.</p> <p>A is incorrect. This option is the converse of the original statement.</p> <p>B is incorrect. This option is the inverse of the original statement.</p> <p>D is incorrect. The correct statement is ‘I will have the flu only if you have the flu’.</p>	<p>MEX–P1 The Nature of Proof MEX12–2, 12–8 Band E2</p>
<p>Question 10 A</p> <p>A is correct. The particle’s path is a spiral as the amplitudes of the sine and cosine functions are increasing with t. When $t = \frac{\pi}{2}$, $x = \frac{\pi}{2}$ and $y = 0$. When $t = \pi$, $x = 0$ and $y = -\pi$. Hence, the direction of movement is clockwise.</p> <p>B is incorrect. This option gives the incorrect direction of travel.</p> <p>C and D are incorrect. The path is not a helix.</p>	<p>MEX–V1 Further Work with Vectors MEX12–1, 12–3 Bands E3–E4</p>