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# JC MATHEMATICS (H2) STUDY TIPS

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**MASTERING THE SKETCH OF  
FIRST DERIVATIVE GRAPH WITH  
TWO KEY CONSIDERATIONS**

**PREPARED BY**  
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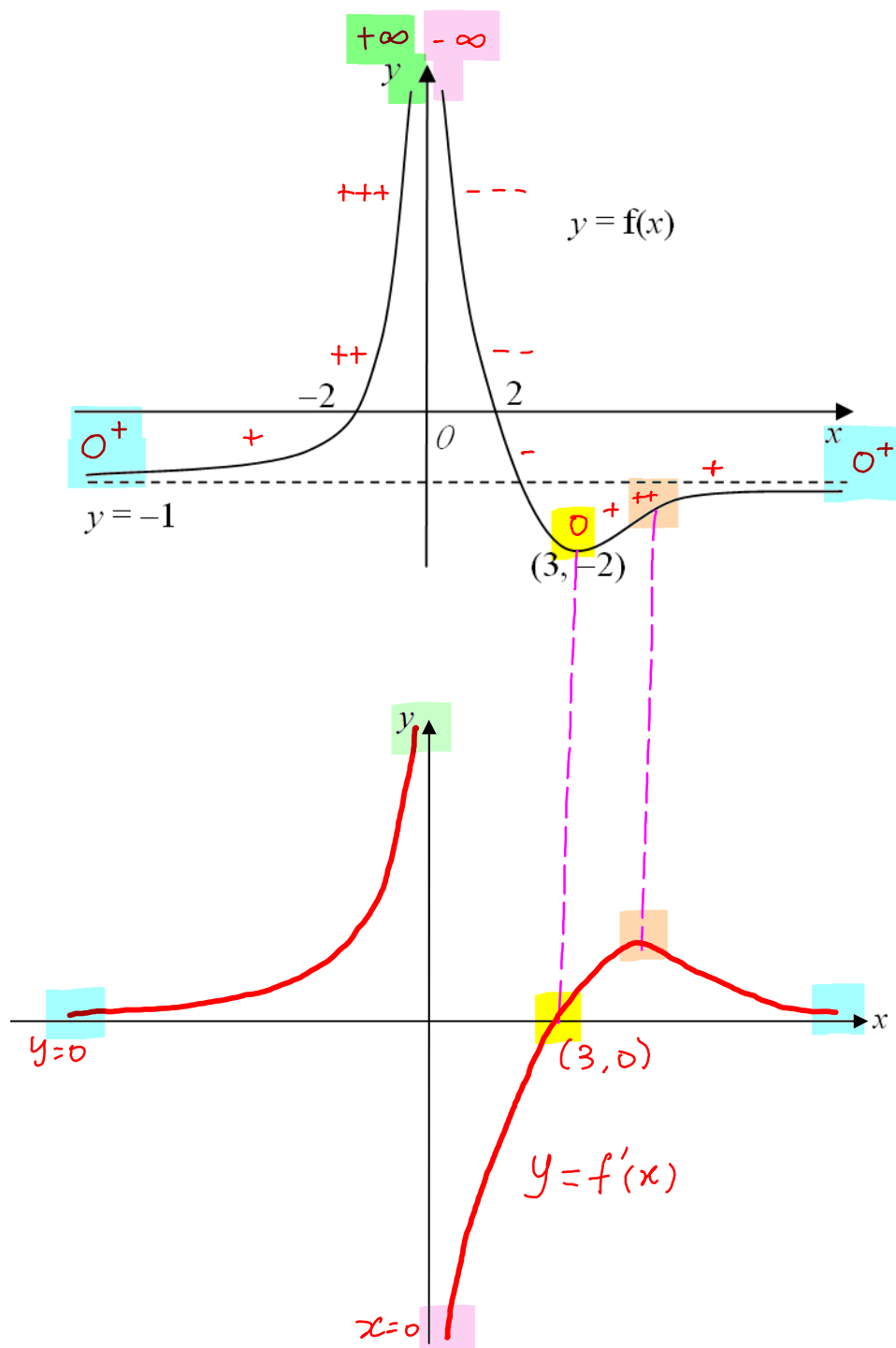
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JC\_H2Maths\_022



### Example 19

Based on the graph of  $y = f(x)$  below, sketch the graphs of  $y = f'(x)$ .





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## Explanation

When sketching a gradient (first derivative) graph, focus on two main questions to determine your new curve's shape and position.

First, ask if the original gradient is positive or negative. A positive gradient means the function slopes upward, translating into positive  $y$ -values where the new graph stays above the  $x$ -axis. Conversely, a negative gradient slopes downward, placing the new graph below the  $x$ -axis.

Second, consider if the gradient is large, small, or zero to determine its distance from the horizontal axis. A steep slope (large gradient) moves the new curve far away from the  $x$ -axis, while a gentle slope (small gradient) keeps it close.

Crucially, any flat stationary point (zero gradient) becomes an  $x$ -intercept on your new graph.

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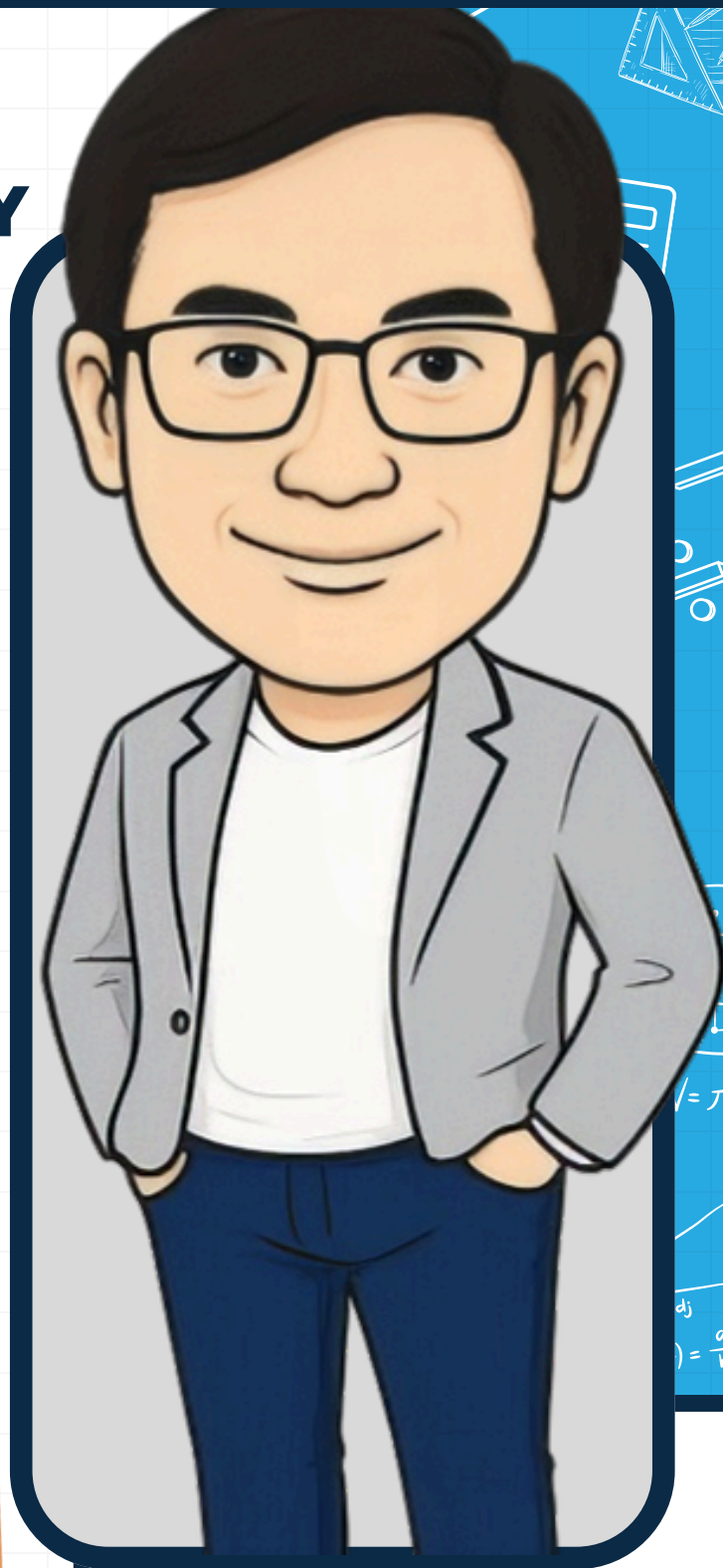
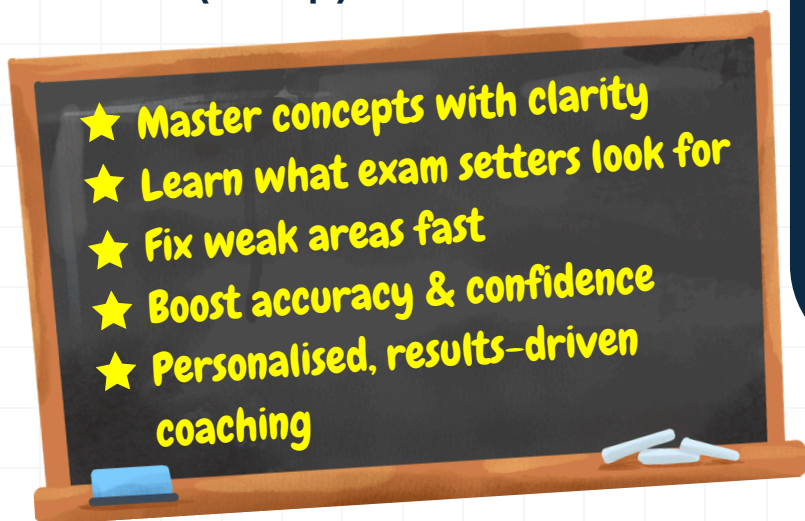
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## MATHS TUITION BY MR JACKIE LEE

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- ✓ Former MOE Scholar
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