Find the average rate of change of the function over the given interval.
1) \( y = x^2 + 4x, [3, 8] \)

Find the slope of the curve at the given point \( P \) and an equation of the tangent line at \( P \).
2) \( y = x^2 + 5x, P(4, 36) \)
3) \( y = x^3 - 2x^2 + 4, P(3, 13) \)
4) \( y = -4 - x^3, (1, -5) \)

Use the slopes of \( UQ, UR, US, \) and \( UT \) to estimate the rate of change of \( y \) at the specified value of \( x \).
5) \( x = 5 \)

Use the table to estimate the rate of change of \( y \) at the specified value of \( x \).
6) \( x = 1 \).
Answer Key
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1) 15
2) slope is 13; y = 13x - 16
3) slope is 15; y = 15x - 32
4) slope is -3; y = -3x - 2
5) A
6) C