

$$s = \frac{p_y - q_y}{p_x - q_x}, \quad r_x = s^2 - p_x - q_x, \quad r_y = s(p_x - r_x) - p_y$$

$$s = \frac{3(p_x^2 + a)}{2p_y}, \quad r_x = s^2 - 2p_x, \quad r_y = s(p_x - r_x) - p_y$$

$$R = (R_x, R_y) = kG, \quad r = R_x \bmod n$$

$$s = \frac{H(m) + rd}{k} \bmod n$$

$$u_1 = H(m)(s^{-1} \bmod n) \bmod n$$

$$u_2 = r(s^{-1} \bmod n) \bmod n$$

$$P = (P_x, P_y) = u_1G + u_2Q, \quad p = P_x \bmod n$$