(9) $x^2 + \frac{1}{x^2}$

$g(x) = x^2 + x^{-2}$

$\boxed{g'(x) = 2x - 2x^{-3}}$

(11) $y = \frac{x^2+4x+3}{x}$

$y = x + 4 + \frac{3}{x^1}$

$y = x + 4 + 3x^{-1}$

$\boxed{y' = 1 - 3x^{-2}}$

(13) $y = \frac{3}{4}x^{-3} + \frac{7}{2}x^{-9} + \sqrt[5]{2}\cdot x^{4/5} - \sqrt[8]{3}\cdot x^{9/8}$

$y' = \frac{-9}{4}x^{-4} + \frac{-63}{2}x^{-10} + \frac{4}{5}\cdot\sqrt[5]{2}\cdot x^{-1/5} - \frac{9}{8}\cdot\sqrt[8]{3}\cdot x^{1/8}$

(15) $y = \frac{1}{4}x^{12} - \frac{1}{2}x^{9} + \frac{5}{4}x^{-7}$

$y' = 3x^{11} - \frac{9}{2}x^{8} - \frac{35}{4}x^{-8}$

(16) $y = x + x^{1/2}$ $\quad x = 1 \longrightarrow (1, 2)$

$y' = 1 + \frac{1}{2}x^{-1/2}$

$y' = 1 + \frac{1}{2 \cdot x^{1/2}}$

$y' = 1 + \frac{1}{2\sqrt{x}}$

$y'(1) = 1 + \frac{1}{2\sqrt{1}}$

$= \frac{3}{2} = m$

$y = mx + b$

$2 = \frac{3}{2} \cdot 1 + b$

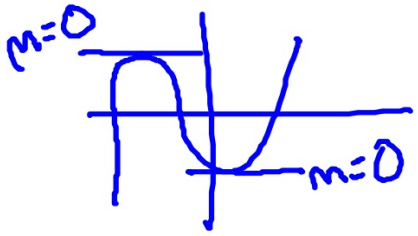
$2 = \frac{3}{2} + b$

$\frac{1}{2} = b$

$y = \frac{3}{2}x + \frac{1}{2}$

(17) $y = x^3 - x^2 - x + 1$

$y' = 3x^2 - 2x - 1 = m_{tan}$




$3x^2 - 2x - 1 = 0$

$(3x + 1)(x - 1) = 0$

$x = -1/3, \; x = 1$