

4 (772) ⑩ $f'(3) = 3^2 - 2 \cdot 3 - 1 = 2$ הנקודה (3,1) הנגזרת

$y - 1 = 2(x - 3) \rightarrow \boxed{y = 2x - 5}$ הנגזרת הנכונה

⑪ $-1 = x^2 - 2x - 1$

$0 = x(x - 2) \rightarrow \begin{cases} x = 0 \\ x = 2 \end{cases}$

$f(x) = \int (x^2 - 2x - 1) dx = \frac{x^3}{3} - x^2 - x + C$

הצבה לנקודה

$f(3) = 1 = \frac{3^3}{3} - 3^2 - 3 + C \rightarrow \boxed{C = 4}$

$f(x) = \frac{x^3}{3} - x^2 - x + 4$

$f(0) = 4$

$f(2) = \frac{2}{3}$

נקודות הנגזרת

$y - \frac{2}{3} = -1(x - 2) \rightarrow \boxed{y = -x + 2\frac{2}{3}}$

(2, 2/3) | (-1) | עלייה

$y - 4 = -1(x - 0) \rightarrow \boxed{y = -x + 4}$

(0, 4) | " | (-1) | "

2 (772) $y = \int (3x^2 + x) dx = x^3 + \frac{x^2}{2} + C$, $y(2) = 7 = 2^3 + \frac{2^2}{2} + C \rightarrow \boxed{C = -3}$
 $\boxed{y = x^3 + \frac{x^2}{2} - 3}$

6 (772) $f(x) = \int (15(5-x)^4) dx = \frac{15(5-x)^5}{-5} + C = -3(5-x)^5 + C$

$f(6) = 9 = -3(5-6)^5 + C \rightarrow \boxed{C = 6}$ $f(x) = -3(5-x)^5 + 6 \rightarrow \boxed{f(5) = 6}$

8 (772) $f(x) = \int x(x^2-6)^4 dx = \int \frac{u^4}{2} du = \frac{u^5}{10} + C$

$u = x^2 - 6$: נקודה
 $du = 2x dx$

$f(x) = \frac{(x^2-6)^5}{10} + C$ $f(2) = -1.2 = \frac{(2^2-6)^5}{10} + C \rightarrow \boxed{C = 2}$ $\boxed{f(x) = \frac{(x^2-6)^5}{10} + 2}$

9 (772) $f'(x) = 0 = 4x - 8 \rightarrow \boxed{x = 2}$ $f'' = 4$

נקודה המינימום של הפונקציה

(2, -3) : נקודה מינימום

$f(x) = \int (4x - 8) dx = 2x^2 - 8x + C \rightarrow f(2) = -3 = 2 \cdot 2^2 - 8 \cdot 2 + C \rightarrow \boxed{C = 5}$

$\boxed{f(x) = 2x^2 - 8x + 5}$