

## تمرین پ. 1

$$\textcircled{1} \int \frac{3}{\sqrt{2y+1}} dy = \int 3(2y+1)^{\frac{1}{2}} = \frac{(3)(2)\sqrt{2y+1}}{2} + C$$

$$\textcircled{2} \int \frac{7}{x^2-6x+9} dx = \int 7(x-3)^{-2} = -7(x-3)^{-1} + C$$

$x^2-6x+9 \rightarrow (x-3)^2$

$$\textcircled{3} \int (6x^2-x+5) dx = 2x^3 - \frac{1}{2}x^2 + 5x + C$$

$$\textcircled{4} \int \left( \frac{1}{x^2} - x^{\frac{3}{5}} + 4x \right) dx = -\frac{1}{x} - \frac{5}{8} \sqrt[5]{x^8} + 2x^2 + C$$

## تمرین پ. 2

$$\textcircled{1} \int \frac{x^2-5x+6}{x-3} dx = \int \frac{(x-3)(x-2)}{(x-3)} dx = \frac{x^2}{2} - 2x + C$$

$$\textcircled{2} \int \frac{8x^3+27}{2x+3} dx = \int \frac{(2x+3)(4x^2-6x+9)}{(2x+3)} = \frac{4}{3}x^3 - 3x^2 + 9x + C$$

$$\textcircled{3} \int (x^2+2)^2 dx = \int x^4 + 4x^2 + 4 = \frac{x^5}{5} + \frac{4}{3}x^3 + 4x + C$$