

$$\textcircled{5} \quad y = x^5$$

$$y' = 5x^4$$

$$\textcircled{9} \quad y = 5x^4 - 3\pi$$

$$y' = 20x^3$$

$$\textcircled{13} \quad p = 5r^3 - 2r + 1$$

$$p' = 15r^2 - 2$$

$$\textcircled{17} \quad f(x) = -6x^7 + 5x^3 + \pi^2$$

$$f'(x) = -42x^6 + 15x^2$$

$$\textcircled{21} \quad y = 6x^2 - 8x + 1$$

$$y' = 12x - 8$$

$$y'|_{x=2} = 16$$

$$\textcircled{25} \quad y = 2x^6 - 4x^2$$

$$y' = 12x^5 - 8x$$

$$y'|_{x=-1} = 12(-1)^5 - 8(-1)$$

$$= -4$$

$$\textcircled{37} \quad y = 3x^2 - 6x$$

$$y' = 6x - 6$$

$$\text{Set } y' = 0: \quad \begin{aligned} 6x - 6 &= 0 \\ 6x &= 6 \\ x &= 1 \end{aligned}$$

$$\textcircled{39} \quad y = 3x^2 - 4x$$

$$y' = 6x - 4$$

$$\text{Set } y' = 8: \quad \begin{aligned} 6x - 4 &= 8 \\ 6x &= 12 \\ x &= 2 \end{aligned}$$

$$\begin{aligned} x = 2 \rightarrow y &= 3x^2 - 4x \\ y &= 3(2^2) - 4(2) \\ &= 4 \end{aligned}$$

The point is  $(x, y) = (2, 4)$ .