6. $f(x) = 5(x-3)^2$ $(2, 5)$

FIND SLOPE OF GRAPH AT GIVEN POINT

① FIND DERIVATIVE

$f(x) = 5(x-3)(x-3)$

$= 5(x^2 - 3x - 3x + 9)$

$= 5(x^2 - 6x + 9)$

$= 5x^2 - 30x + 45$

$f'(x) = 5 \cdot 2x^1 - 30 + 0$

$f'(x) = 10x - 30$

② CHANGE $f'(x)$ TO m AND PLUG IN x PART OF POINT AND SIMPLIFY

$m = 10(2) - 30$

$m = 20 - 30$

$m = -10$

7. $f(x) = \frac{5}{x^4}$ $(1, 5)$

$= 5x^{-4}$

① $f'(x) = 5(-4)x^{-4-1}$

$= -20x^{-5}$

$= \frac{-20x^{-5}}{1}$

$f'(x) = \frac{-20}{x^5}$

② $m = \frac{-20}{1^5}$

$m = -20$

8. $f(x) = -3\sin x + 2$ $(0, 2)$

① $f'(x) = -3\cos x + 0$

$f'(x) = -3\cos x$

② $m = -3\cos 0$

$= -3(1)$

$m = -3$