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$$\sqrt{\frac{2}{3}} < x \leq 3$$

1. PGS & PGN $y = f(x) = 5x^2 - 3x$, $A(2, 14)$

$$m = 10x - 3$$

$$m = 10(2) - 3 = 20 - 3$$

$$= 17$$

PGS

$$y - 14 = 17(x - 2)$$

$$y = 17x - 34 + 14$$

$$y = 17x - 20$$

$$y - 14 = \frac{1}{17}(x - 2)$$

$$y = \frac{x}{17} + \frac{2}{17} + 14$$

$$y = \frac{x}{17} + \frac{240}{17}$$

2. nilai max & min $f(x) = 2x^3 - 15x^2 + 36x$, interval $1 \leq x \leq 5$

$$f'(x) = 6x^2 - 30x + 36 = 0$$

$$6 : -3 : -2$$

$$-5 : -3 : -2$$

$$x^2 - 5x + 6 = 0$$

$$(x - 3)(x - 2)$$

$$x = 3 \quad x = 2$$

$$f(3) = 2(3)^3 - 15(3)^2 + 36(3) = 27$$

$$f(2) = 2(2)^3 - 15(2)^2 + 36(2) = 28$$

$$f(1) = 2(1)^3 - 15(1)^2 + 36(1) = 23 \rightarrow \min$$

$$f(5) = 2(5)^3 - 15(5)^2 + 36(5) = 55 \rightarrow \max$$

3. Interval fungsi naik & turun $f(x) = \frac{1}{3}x^3 - \frac{3}{2}x^2 - 4x + 5$

$$f'(x) = \frac{1}{3} \cdot 3x^2 - \frac{3}{2} \cdot 2x - 4$$

$$-4 = -4x^2 - 3x - 4 = 0$$

$$-3 = -4x^2 \quad (x-4)(x+1)$$

$$x = 4 \quad x = -1$$

Interval fungsi turun
 $-1 < x < 4$

Interval fungsi naik
 $x < -1$ & $x > 4$



$$x = 0 \rightarrow f'(0) = 0^2 - 3(0) - 4 = -4$$

$$x = 5 \rightarrow f'(5) = 5^2 - 3(5) - 4 = 25 - 15 - 4 = 6$$

$$x = -2 \rightarrow f'(-2) = (-2)^2 - 3(-2) - 4 = 4 + 6 - 4 = 6$$