

$$1) f'(x) = 3 \times 8x^2 - 2 \times 4x + 7 = 24x^2 - 8x + 7$$

$$2) f'(x) = 5(3x - 8) + 3(5x) = 15x - 40 + 15x = 30x - 40$$

$$3) f'(x) = \frac{9}{2\sqrt{9x-7}}$$

$$4) f'(x) = 4 \times 8(8x - 7)^3 = 32(8x - 7)^3$$

$$5) f'(x) = \frac{3(2x+12)-2(3x-9)}{(2x+12)^2} = \frac{6x+36-6x+18}{(2x+12)^2} = \frac{54}{(2x+12)^2}$$