Exercise 2

Dengan menggunakan rumus dasar turunan dan sifatnya, maka tentukan turunan dari fungsi berikut

1. $f(x) = 2x^{-3}$	$f'(x) = (\ldots)2x^{\cdots-1} = \cdots x^{\cdots} = \dfrac{-6}{x^{\cdots}}$
2. $f(x) = \frac{3}{x^5}$	$f(x) = \dfrac{3}{x^5} = 3x^{\cdots\cdots}$ $f'(x) = \ldots\ldots 3x^{\cdots\cdots-1} = \ldots\ldots 3x^{\cdots\cdots} = \dfrac{\ldots\ldots}{x^{\cdots\cdots}}$
3. $f(x) = 4\sqrt{x^3}$	$f(x) = 4x^{\frac{3}{\cdots}}$ $f'(x) = \dfrac{3}{\ldots\ldots}4x^{\cdots\cdots-1} = \ldots\ldots x^{\cdots\cdots} = \ldots\ldots\sqrt{x}$
4. $f(x) = 4x^2 + x^{\frac{2}{3}} - \sqrt{x}$	$f(x) = 4x^2 + x^{\frac{2}{3}} - \sqrt{x} = 4x^2 + x^{\frac{2}{3}} - x^{\frac{1}{2}}$ $f'(x) = \ldots\ldots x + \dfrac{2}{3}x^{\frac{\cdots\cdots}{\cdots\cdots}-1} - \dfrac{\ldots\ldots}{\ldots\ldots}x^{\frac{\cdots\cdots}{\cdots\cdots}-1}$ $f'(x) = \ldots\ldots x + \dfrac{2}{3}x^{\frac{\cdots\cdots}{\cdots\cdots}} - \dfrac{\ldots\ldots}{\ldots\ldots}x^{\frac{\cdots\cdots}{\cdots\cdots}} = \ldots\ldots x + \dfrac{2}{3\sqrt[\cdots\cdots]{x^{\cdots\cdots}}} - \dfrac{1}{2x^{\frac{\cdots\cdots}{\cdots\cdots}}} = \ldots\ldots x + \dfrac{2}{3\sqrt[3]{x}} - \dfrac{1}{2\sqrt{x}}$
5. $f(x) = (2x+1)(3x-2)$	$u = 2x+1 \quad u' = \ldots\ldots\ldots \quad v = 3x-2 \quad v' = \ldots\ldots$ $f'(x) = u'v + v'u = \ldots\ldots(3x-2) + \ldots\ldots\ldots(2x+1) = \ldots\ldots x - 4 + 6x - \ldots\ldots$ $f'(x) = \ldots\ldots x - \ldots\ldots$
6. $f(x) = \frac{(x+2)^2}{\sqrt{x}}$	$u = (x+2)^2 = x^2 + \ldots\ldots x + 4 \quad u' = \ldots\ldots x + \ldots\ldots$ $v = \sqrt{x} = x^{\frac{\cdots\cdots}{\cdots\cdots}} \quad v' = \dfrac{\ldots\ldots}{2}x^{\frac{\cdots\cdots}{\cdots\cdots}-1} = \dfrac{\ldots\ldots}{2}x^{-\frac{\cdots\cdots}{\cdots\cdots}} = \dfrac{\ldots\ldots}{2\sqrt{x}}$ $f'(x) = \dfrac{u'v - v'u}{v^2} = \dfrac{(\ldots\ldots x + \ldots\ldots)\sqrt{x} - \left(\frac{\ldots\ldots}{2\sqrt{x}}\right)(x+2)^2}{\left(\sqrt{x}\right)^2}$ $f'(x) = \dfrac{2\sqrt{x}(\ldots\ldots x + \ldots\ldots)\sqrt{x} - (x+2)^2}{2\sqrt{x}\cdot x}$ $f'(x) = \dfrac{2x(\ldots\ldots x + \ldots\ldots) - (x^2 + \ldots\ldots x + 4)}{2x\sqrt{x}}$ $f'(x) = \dfrac{4x^2 + \ldots\ldots x - (x^2 + \ldots\ldots x + 4)}{2x\sqrt{x}} = \dfrac{\ldots\ldots x^2 + \ldots\ldots x - 4}{2x\sqrt{x}}$

LIVEWORKSHEETS