(5) Simplificar las siguientes expresiones:

a) $\left(\dfrac{-3}{\frac{4}{5}+1}\right)^{-1}\cdot\left(\dfrac{4}{5}-1\right)+\dfrac{1}{3}$, b) $\dfrac{a}{2\pi-6}(\pi-3)^2-\dfrac{2a(\pi^2-9)}{\pi-3}$.

a) $\left(\frac{-3}{4/5+1}\right)^{-1}\cdot\left(\frac{4}{5}-1\right)+\frac{1}{3} = \left(\frac{-3}{9/5}\right)^{-1}\cdot\left(\frac{-1}{5}\right)+\frac{1}{3}$

$= \left(\frac{-5}{3}\right)^{-1}\cdot\left(\frac{-1}{5}\right)+\frac{1}{3}$

$= \frac{-3}{5}\cdot\frac{-1}{5}+\frac{1}{3}$

$= \frac{3}{25}+\frac{1}{3}$

$= \frac{34}{75}$

b) $\frac{a}{2\pi-6}(\pi-3)^2-\frac{2a(\pi^2-9)}{\pi-3} = \frac{a(\pi^2-3\pi-3\pi+9)}{2(\pi-3)}-\frac{2a(\pi^2-9)}{\pi-3}$

$= \frac{a(\pi^2-6\pi+9)-4a(\pi^2-9)}{2(\pi-3)}$

$= \frac{a\pi^2-6a\pi+9a-4a\pi^2+36a}{2(\pi-3)}$

$= \frac{-3a\pi^2-6a\pi+45a}{2(\pi-3)}$