

Exercise 2015-10 EC-00003(2)

(1) Simplify, without using a calculator: (Write your answer as a positive exponent!)

(a) $\frac{2 \cdot 3^x - 3^{x+1}}{3^{x-1} + 3^x}$

(b) $\frac{18^{n-1} \times 9^{n+3}}{27^n \times 12^{1-n} \times 3^{2n} \times 8^{n-2}}$

(c) $\left(\frac{-2x^{-2}y^3}{3x^5y^{-2}} \right)^3$

(2) Solve for x:

(a) $25^{2x-3} = 125$

(b) $64^{1-x} = 0,125$

(c) $\sqrt[3]{x^4} \cdot x^{\frac{1}{2}} = 2$

(d) $5^{x-1} + 2 \cdot 5^x = \frac{11}{125}$

(e) $8 \times 3^{4x} = 27 \times 2^{4x}$

(f) $(3^{2x} - 9) \left(\left(\frac{1}{5} \right)^{x-1} - 1 \right) = 0$