TC 2.3

11/R

a) $3x - 8 - 2(2x+5) = 3(5x+3)$

$\Leftrightarrow 3x - 8 - 4x - 10 - 15x - 9 = 0$

$\Leftrightarrow -16x - 27 = 0 \quad \Leftrightarrow x = -\frac{27}{16}$

$\Rightarrow S = \left\{-\frac{27}{16}\right\}$

b) $I = \frac{U}{R}$ ; $I_1 = \frac{U}{R_1}$ ; $I_2 = \frac{U}{R_2}$

$\Rightarrow \frac{U}{R} = \frac{U}{R_1} + \frac{U}{R_2}$ (substitution dans $I = I_1 + I_2$)

$\Rightarrow U \cdot \frac{1}{R} = U \cdot \left(\frac{1}{R_1} + \frac{1}{R_2}\right)$ $\div U$

$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$

TC 2.3 $_2$ 11R

c) $T = 2\pi \sqrt{\frac{I}{m \cdot g \cdot r_G}}$

$\Leftrightarrow \frac{T}{2\pi} = \sqrt{\frac{I}{m \cdot g \cdot r_G}} \Leftrightarrow \frac{T^2}{4\pi^2} = \frac{I}{m g r_G}$

$\Leftrightarrow I = \frac{m \cdot g \cdot r_G \cdot T^2}{4\pi^2}$

d) $\left[ 1 - \frac{x-y}{x+y} = \frac{x+y-x+y}{x+y} = \frac{2y}{x+y} \right]$

$\left[ \frac{(x-y)^2 - (x+y)^2}{x^2 - y^2} = \frac{-4xy}{x^2 - y^2} \right]$

$\frac{2y}{x+y} \cdot \frac{(x+y)(x-y)}{-4xy} = -\frac{1}{2} \cdot \frac{x-y}{x}$

TC 2.3

3

1MR

e) $x^3 - 4x^2 - 7x + 10$ à factoriser.

$1^3 - 4 \cdot 1^2 - 7 \cdot 1 + 10 = 11 - 11 = 0$

$\Rightarrow x^3 - 4x^2 - 7x + 10 = (x-1)(x^2+bx+c)$

$(x-1)(x^2+bx+c) = x^3 + bx^2 + cx - x^2 - bx - c$

$= x^3 + (b-1)x^2 + (c-b)x - c$

$= x^3 - 4x^2 - 7x + 10$

$\Rightarrow b-1 = -4 ; \; c-b = -7 ; \; -c = 10$

$\Rightarrow c = -10 ; \; b = -3$

$\Rightarrow x^3 - 4x^2 - 7x + 10 = (x-1)(x^2-3x-10)$

$= (x-1)(x-5)(x+2)$

somme / produit