SECOND TERM GLOBAL TEST
2° ESO

Exercise 1: (2.25 ptos) Solve the following equations:

a) $5(2x-5)-4(x-3)=2x-(5-3x) \rightarrow \boxed{x=8}$

b) $7(x-2)-2(x+3)=x+4(x-5) \rightarrow \infty$ solutions

c) $\frac{3x-1}{2}-\frac{2x-5}{3}=x-\frac{2-x}{5} \rightarrow \boxed{x=\frac{47}{11}}$

d) $\frac{7}{4}=\frac{5x-8}{2x+7} \rightarrow \boxed{x=\frac{27}{2}}$

Exercise 2: (2 ptos) Expand using quadratic multiplication formulas:

a) $(y-7)^2=y^2-14y+49$

b) $(3x+5)^2=9x^2+30x+25$

c) $(3a+b)(3a-b)=9a^2-b^2$

d) $\left(x^4+5x^2\right)^2=x^8+10x^6+25x^4$

Exercise 3: (1 pto) Take out common factors:

a) $10a^2b^5-14a^7b^3-2a^2b^3=2a^2b^3\left(5b^2-7a^5-1\right)$

b) $24x^5-12x^4-6x^3+18x^2=6x^2\left(4x^3-2x^2-x+3\right)$

Exercise 4: (1.5 ptos) Given the polynomials $P(x)=5x^3-7x^2-2$, $Q(x)=4x^3-7x^2-5x$ and $R(x)=3x-8$, work out:

a) $P+Q=9x^3-14x^2-5x-2$

b) $P-Q=x^3+5x-2$

c) $P\cdot R=15x^4-61x^3+56x^2-6x+16$

Exercise 5: (1 pto) Work out:

$$\left(\frac{6}{5}-\frac{2}{7}\right)^{-1}-\left(\frac{2}{3}:\frac{4}{2}\right)^{-2}+2^{-3}=\frac{-249}{32}$$

Exercise 6: (1.25 ptos) A couple of months ago I bought a package of coffee. The first month I used two fifths of the coffee, and the next month, three fourths of the remaining. I still have 45 gr of coffee left. What was the original weight of the package? 300 gr

Exercise 7: (1 pto) Evaluate the polynomial $P(x)=4x^3-7x^2+5x-9$ when $x=2$ and when $x=-1$

$P(2)=5$ $\quad$ $P(-1)=-25$