FRACTIONS AND POLYNOMIALS TEST – 2º ESO

Exercise 1: (1.25 ptos) In a certain village, one fourth of the inhabitants contracted the delta variant of the coronavirus and two fifths of the remaining ones got the omicron variant. If there are still 10800 people who weren't infected, how many people live in the village? 24000 people

Exercise 2: (1 pto) Five sevenths of my students passed the first trimester Math exam, and one fifth of the students retook the exam after Christmas and passed too. If I have 105 students:

a) What fraction has passed the exam so far? $32/35$

b) What fraction has failed? $3/35$

c) How many students didn't still pass any of the Math exams? 9 students

Exercise 3: (1 pto) Express using algebraic language:

a) One half a number plus seven $\frac{x}{2}+7$

b) The difference of two numbers $a-b$

c) The square of a number minus its double z^2-2z

d) The third part of the product of two numbers $\frac{xy}{3}$

Exercise 4: (3 ptos) Work out:

a) $\left(\sqrt{\frac{2}{3}:\frac{12}{8}}\right)^{-1}-5^{-1}-\frac{3}{5}:\frac{4}{7}=\frac{1}{4}$

b) $\left(2-\frac{5}{2}:\frac{3}{4}\right)^{-2}-\left(\frac{5}{4}\right)^{2}=-1$

c) $\left(\frac{3}{5}-\frac{1}{3}\right)^{-2}+\left(\frac{2}{3}\cdot\frac{4}{3}\right)^{-1}-1=\frac{227}{16}$

Exercise 5: (1 pto) Indicate the coefficient, the literal part and the degree of the following monomials:

	Coefficient	Literal part	Degree
a) bye	1	bye	3
b) $\frac{2}{7}x^2y^3z$	$\frac{2}{7}$	x^2y^3z	6
c) $5x^2-x$	It's not a monomial		
d) $-a$	-1	a	1

Exercise 6: (0.75 ptos) Order the following fractions from the smallest to the greatest:

$2/3$ $3/5$ $5/2$ 2 $1/2$

$$\frac{1}{2} < \frac{3}{5} < \frac{2}{3} < 2 < \frac{5}{2}$$

Exercise 7: (2 ptos) Work out:

a) $7(2x-4)-3(x-2)=11x-22$

b) $7x+2y-4z-5x-3y-9z=2x-y-13z$

c) $3x^2-5x+2-x^2+4x-8=2x^2-x-6$

d) $5(4-5x)-(7-x)=13-24x$