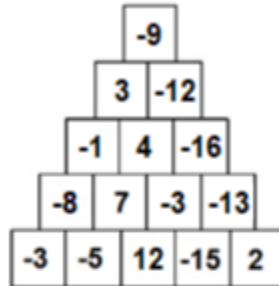




DIVISIBILITY, INTEGERS,
POWERS AND ROOTS TEST - 2º ESO



Exercise 1: (1 point) Fill in the gaps in this pyramid knowing that each cell can be found as the sum of the two cells directly below



Exercise 2: (0.75 points) Alexander the Great was born on the year 356 BC and died on the year 323 BC. How old was he when he died? **He was 33 years old**

Exercise 3: (1 point) Work out:

a) $\left(\frac{3}{5}\right)^{-3} = \frac{125}{27}$ b) $7^{-1} = \frac{1}{7}$ c) $(-2)^6 = 64$ d) $-3^4 = -81$

Exercise 4: (2 points) Work out the value of the following expressions:

a) $(5^2 \cdot 5^4)^{-3} = \frac{1}{5^{18}}$ b) $u^{-5} \cdot u^6 : u^{-7} = u^8$
 c) $(a^{10} \cdot a^4) : (a^{12} \cdot a^{-2}) = 1$ d) $(x^{-4} \cdot x^{-1}) : (x^8 \cdot x^{-3}) = \frac{1}{x^{10}}$

Exercise 5: (1.25 points) Work out the value of the following expressions:

a) $\frac{a^6 \cdot b^{-9} \cdot a^{-7}}{a^{-2} \cdot b^{-4} \cdot b^6} = \frac{a}{b^{11}}$ b) $\frac{3^5 \cdot 12^{-2} \cdot 2^4}{9^{-3} \cdot 2^{-1}} = 2 \cdot 3^9$

Exercise 6: (1.5 points) Work out:

a) $\sqrt{7056000000} = 84000$ b) $\sqrt[5]{\frac{x^{15} \cdot y^{-5}}{z^{-20}}} = \frac{x^3 z^4}{y}$ c) $\sqrt[4]{8100000000} = 300$

Exercise 7: (1 point) I want to prepare Halloween cookies for all the five hundred and eighty-eight students in my school. I have an oven with three square trays that I can use at the same time. How many cookies do I have to place on the side of each tray so I only have to bake once? **14 cookies**

Exercise 8: (1.5 points) Work out the value of the following expressions:

a) $5 - 3 \cdot 2^3 - 2 \cdot \sqrt{8+1} + (-2)^2 = -21$
 b) $(\sqrt{81} - \sqrt{49})^3 - \sqrt{9} \cdot \sqrt[3]{8} : (-1) - 4^2 = -2$

