DIVISIBILITY, INTEGER NUMBERS, POWERS AND ROOTS TEST - 2º ESO

Exercise 1: **(1 point)** Work out:

a) $\text{lcm}\,(91,\ 98) = 1274$

b) $\text{hcf}\,(64,\ 45) = 1$

Exercise 2: **(1 point)** I've asked my gnomes to build a square pen for my four unicorns, and I need it to be big enough so they can also keep the safety distance. Just in case. If I can count with a surface of $5184\ \text{m}^2$, how many meters of wood will I need? 288 m of wood

Exercise 3: **(1 point)** Work out:

a) $-5^2 = -25$ b) $\left(\frac{5}{3}\right)^{-3} = \frac{27}{125}$ c) $7^{-2} = \frac{1}{49}$ d) $(-2)^5 = -32$

Exercise 4: **(2.5 points)** Work out the value of the following expressions:

a) $(a^5)^{-2} \cdot a^{-10} = \frac{1}{a^{20}}$

b) $\left(2^{-10} : 2^5\right) : \left(2^{-9} \cdot 2^{-6}\right) = 1$

c) $\left(b^{-1} : b^2\right) : \left(b^{-2} : b^{10}\right) = b^9$

d) $\left(z^{-4} \cdot z^9\right) \cdot \left(z^{-2} \cdot z^{-6}\right) = \frac{1}{z^3}$

e) $3 + 3^2 + 3^3 = 39$

Exercise 5: **(1.5 points)** Work out the value of the following expressions:

a) $\frac{x^8 \cdot y^{-5} \cdot x^{-7}}{y^4 \cdot x^3 \cdot y^{-8}} = \frac{1}{x^2 y}$ b) $\frac{14^3 \cdot 7^{-5}}{49^{-4} \cdot 4^7} = \frac{7^6}{2^{11}}$

Exercise 6: **(1.5 points)** Work out the value of the following expressions:

a) $5 - 2 \cdot \sqrt{25} : (-5) - (1-3)^3 = 15$

b) $\sqrt{29+7} : 6 - \left(\sqrt{81} - \sqrt{64}\right)^7 - 3^2 \cdot 2^3 = -72$

Exercise 7: **(1.5 points)** Work out:

a) $\sqrt[3]{125\,000\,000\,000} = 5000$

b) $\sqrt[7]{2^{35} \cdot 3^{14} \cdot 7^{7}} = 2^{5} \cdot 3^{2} \cdot 7$

c) $\sqrt[3]{\frac{a^{-9} \cdot e^{3}}{v^{-15}}} = \frac{ev^{5}}{a^{3}}$

d) $\sqrt{3969} = 63$