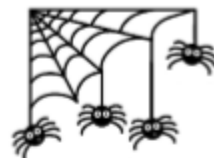




## DIVISIBILITY, INTEGERS, POWERS AND ROOTS TEST - 2° ESO



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

- a)  $\text{lcm}(42, 56) =$
- b)  $\text{hcf}(98, 126) =$
- c)  $\text{hcf}(68, 117) =$

**Exercise 2: (1 point)** Work out the values of these powers:

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

**Exercise 3: (0.75 points)** The highest building on Earth is the Burj Khalifa, in Dubai, with a height of 828 m, while the deepest oil well goes 12345 m into the Earth. What's the difference of distances between them?

**Exercise 4: (1.25 points)** Work out:

a)  $x^5 \cdot x^{-8} =$                       b)  $y^{-7} : y^4 =$   
c)  $z^{-10} \cdot z^{12} =$                       d)  $w^2 : w^{-5} =$

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

a)  $(x^3 \cdot x^{-5}) \cdot (x^2 : x^3) =$   
b)  $(w^7 : w^{-3}) : (w^{15} : w^5) =$   
c)  $(a \cdot a^3)^{-5} \cdot a^8 =$

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

a)  $\frac{a^{-3} \cdot b^7 \cdot a \cdot b^{-4}}{a^{-4} \cdot b^5 \cdot a^3} =$                       b)  $\frac{6^5 \cdot 3^7 \cdot 2^3}{3^6 \cdot 2^2 \cdot 3^8} =$

**Exercise 7: (1.25 points)** Work out the value of the following expressions:

a)  $3 - 7 \cdot (-2) + \sqrt{20+5} : (-1) - (-2)^3 =$   
b)  $(\sqrt{100} - \sqrt{49})^2 + (5-7)^3 - 1^{28} =$

**Exercise 8: (1 point)** Work out:

a)  $\sqrt{17640000} =$   
b)  $\sqrt[3]{2^9 \cdot 5^{12} \cdot 7^{30}} =$   
c)  $\sqrt[6]{729\,000\,000\,000\,000} =$

**Exercise 9: (0.75 points)** This year they've harvested two hundred and twenty-one pumpkins for the Halloween festival. They want to place them forming the biggest possible square. How many pumpkins are there on each side? How many pumpkins are left? What's the biggest possible square they can form with them?

