

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

Exercise 1: (2 points) Work out

- a) $\text{lcm}(294, 392) =$
- b) $\text{lcm}(130, 182) =$
- c) $\text{hcf}(16, 27) =$
- d) $\text{hcf}(17, 51) =$

Exercise 2: (0.75 points) The planes to Paris leave every eight hours, and the planes to New York every twelve hours. If both left this morning at 06:30h, when will they coincide again?

Exercise 3: (2 points) Work out the value of the following expressions:

- a) $(3^4)^{-2} \cdot 3^{10} =$
- b) $(7^{11} : 7^5) : (7^{10} \cdot 7^{-4}) =$
- c) $x^2 \cdot x^{-5} : x^4 =$
- d) $(a^{-3} \cdot a^8) : (a^{-2} \cdot a^{-6}) =$

Exercise 4: (0.75 points) Work out:

- a) $\left(\frac{5}{7}\right)^{-2} =$
- b) $-3^4 =$
- c) $(-2)^{-5} =$

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

- a) $\frac{x^{-4} \cdot y^3 \cdot (y^2)^{-5} \cdot x^{14}}{x^2 \cdot y^{-4} \cdot x^3} =$
- b) $\frac{25^3 \cdot 5^{-3} \cdot 2^2}{10^4 \cdot 2^7 \cdot 5^{-7}} =$

Exercise 6: (0.75 points) I want to build a square pen for my sheep so they don't go away. The area of the field is 784 m^2 . How many meters of fence do I have to use?

Exercise 7: (1.25 points) Work out:

- a) $\sqrt{810\,000\,000\,000} =$
- b) $\sqrt[5]{2^{15} \cdot 3^5 \cdot 7^{20}} =$
- c) $\sqrt[6]{729\,000\,000\,000\,000} =$

Exercise 8: (1.25 points) Work out the value of the following expressions:

- a) $5 - 2 \cdot \sqrt{64} : (-4) - 5 \cdot 3^2 + (-2)^3 =$
- b) $\left(\sqrt{81} - \sqrt{49}\right)^3 - \sqrt{29-4} : (-5) - 2^3 \cdot 3^2 + 1^{17} =$