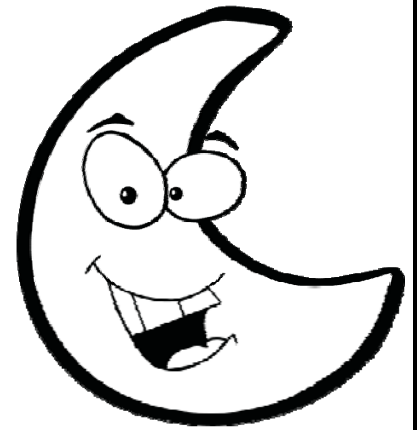


Using the Product Rule Guided Lesson Explanation

$$1) 15^6 \times 15^8 =$$

All exponents have the same base, so we can use the Product Rule of Exponents. This rule states that the sum of the exponents to the set base, is equal to the product of exponents with the same base.

$$15^6 \times 15^8 = 15^{6+8} = 15^{14}$$



$$2) 18^{-9} \cdot 18^5 \cdot 18^2 =$$

Just as in problem one, the exponents all share the same base. Therefore, the sum of the exponents will provide us the end product value.

$$18^{-9} \cdot 18^5 \cdot 18^2 = 18^{-9+5+2} = 18^{-2}$$

$$3) x^{11}y^{-7} \cdot x^{-8}y^9 \cdot x^{-2}y^5$$

We can approach this problem by treating each variable (x and y) by itself.

$$\left(x^{11} \cdot x^{-8} \cdot x^{-2} \right) \left(y^{-7} \cdot y^9 \cdot y^5 \right)$$

Now we can apply the Product Rule to each variable set:

$$x^{11} \cdot x^{-8} \cdot x^{-2} = x^{11-8-2} = x^1 \text{ or } x$$

$$y^{-7} \cdot y^9 \cdot y^5 = y^{-7+9+5} = y^{-7+9+5} = y^7$$

Combine variables: xy^7

