49 For naturals \( n \) and \( m \), we can express the statement “\( n \) is a factor of \( m \)” formally as

\[ m : n \times \text{nat} \]

(a) What are the factors of \( 0 \)?
(b) What is \( 0 \) a factor of?
(c) What are the factors of \( 1 \)?
(d) What is \( 1 \) a factor of?

After trying the question, scroll down to the solution.
(a) What are the factors of 0?
§ For any natural \( n \) we have 0\( \times nat \), so all naturals are factors of 0.

(b) What is 0 a factor of?
§ \( m: 0 \times nat \) requires \( m \) to be 0, so 0 is a factor of only 0.

(c) What are the factors of 1?
§ 1\( \times nat \) requires \( n \) to be 1, so only 1 is a factor of 1.

(d) What is 1 a factor of?
§ For any natural \( m \) we have \( m: 1 \times nat \), so 1 is a factor of all naturals.