

MATH1050 Proof-writing Exercise 1

Advice.

- Study the Handout *Basic results on divisibility* before answering the questions.
- When doing proofs, remember to adhere to definition, always. Besides the handout mentioned above, Questions (3a), (3b), (4a), (4b) of Exercise 1 are also suggestive on what we mean by adhering to definition.

1. Explain the phrase *divisibility for integers* by giving its appropriate definition.

2. Prove the statements below:

(a) 0 is divisible by 0.

(b) Let x be an integer. Suppose x is divisible by 0. Then $x = 0$.

3. Prove the statement below:

- Let $x, y \in \mathbb{Z}$. Suppose x is divisible by y and y is divisible by x . Then $|x| = |y|$.