Sunrise Secondary School Academic year 2023/2024 1st Secondary Education Mathematics 2nd Assessment 1st Exam Radicals and fractions

Surname:		
	Group: Dat	e:

Answer the questions in the spaces provided. If you run out of room for an answer, continue on the back of the page.

1. Given the equation $x^n + y^n = z^n$ for (x, y, z) and n positive integers.



- (a) For what values of n is the statement in the previous question true?
- (b) For n = 2 there's a theorem with a special name. What's that name?
- (c) What famous mathematician had an elegant proof for this theorem but there was not enough space in the margin to write it down?.
- 2. Prove that the real part of all non-trivial zeros of the function $\zeta(z)$ is $\frac{1}{2}$.