

Name: _____

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1. Find non-negative integer x, y, z which satisfy the following equations

i) $1009^x + y^2z = 2018$ **(10 Marks)**

ii) $1009^x + yz = 2018$ **(10 Marks)**

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- 2 For right-angle triangle ΔABC with $\angle C = 90^\circ$, $\angle B = 30^\circ$ and $c = 10$, find all the altitudes, medians and inner bisectors. **(20 Marks)**

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3. Find the domain of the following functions

$$i) \quad f(x) = \sqrt{x^2 - 1} + \sqrt{4 - x} + \frac{2}{x^2 - 5x + 6} \quad (10 \text{ Marks})$$

$$ii) \quad g(x) = \sqrt{x^2 - 1} + \sqrt{4 - x} + \frac{2}{x^2 - 5x + 6} + \sqrt{\sin \pi x} \quad (10 \text{ Marks})$$