

45th International Physics Olympiad

Astana, Kazakhstan

# Theoretical Competition, Tuesday, 15 July 2014

# List of fundamental constants

|  |  |
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| Speed of light in vacuum |   |
| Gravitational constant |   |
| Free fall acceleration |   |
| Avogadro constant |   |
| Universal gas constant |   |
| Boltzmann constant |   |
| Elementary charge |   |
| Electron rest mass |   |
| Proton rest mass |   |
| Reduced Planck constant | *ћ*  |
| Permittivity of vacuum |   |
| Permeability of vacuum |   |

**Useful mathematical formulas**

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, , with *C* being an arbitrary constant

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