

# Formula Sheet

## Entrance exam for the Bachelor's Program in Business and Economics, Academic year 2026/27

### Notation

- interval notation

$(a, b)$	set of all points $x$ with $a < x < b$
$[a, b]$	set of all points $x$ with $a \leq x \leq b$
$(a, b]$	set of all points $x$ with $a < x \leq b$
$[a, b)$	set of all points $x$ with $a \leq x < b$

- $(A|B)$  – a point in the  $xy$ -coordinate system with the  $x$ -coordinate equal to  $A$  and the  $y$ -coordinate equal to  $B$

### Some formulae (to be used as required)

$$ax^2 + bx + c = 0 \Rightarrow x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}, \quad a \neq 0 \quad (1)$$

$$f(x) = c \Rightarrow f'(x) = 0 \quad (2)$$

$$f(x) = x^n \Rightarrow f'(x) = nx^{n-1} \quad (3)$$

$$f(x) = c \cdot g(x) \Rightarrow f'(x) = c \cdot g'(x) \quad (4)$$

$$f(x) = g(x) \pm h(x) \Rightarrow f'(x) = g'(x) \pm h'(x) \quad (5)$$

$$f(x) = g(x)h(x) \Rightarrow f'(x) = g'(x)h(x) + g(x)h'(x) \quad (6)$$

$$f(x) = \frac{g(x)}{h(x)} \Rightarrow f'(x) = \frac{g'(x)h(x) - g(x)h'(x)}{[h(x)]^2} \quad (7)$$

$$f(x) = g(h(x)) \Rightarrow f'(x) = g'(h(x)) \cdot h'(x) \quad (8)$$

$$f(x) = \ln x \Rightarrow f'(x) = \frac{1}{x} \quad (9)$$

$$f(x) = e^x \Rightarrow f'(x) = e^x \quad (10)$$

$$\binom{n}{k} = \frac{n!}{k!(n-k)!} \quad (11)$$

$$a + ar + ar^2 + \dots + ar^n = a \frac{1 - r^{n+1}}{1 - r}, \quad r \neq 1 \quad (12)$$