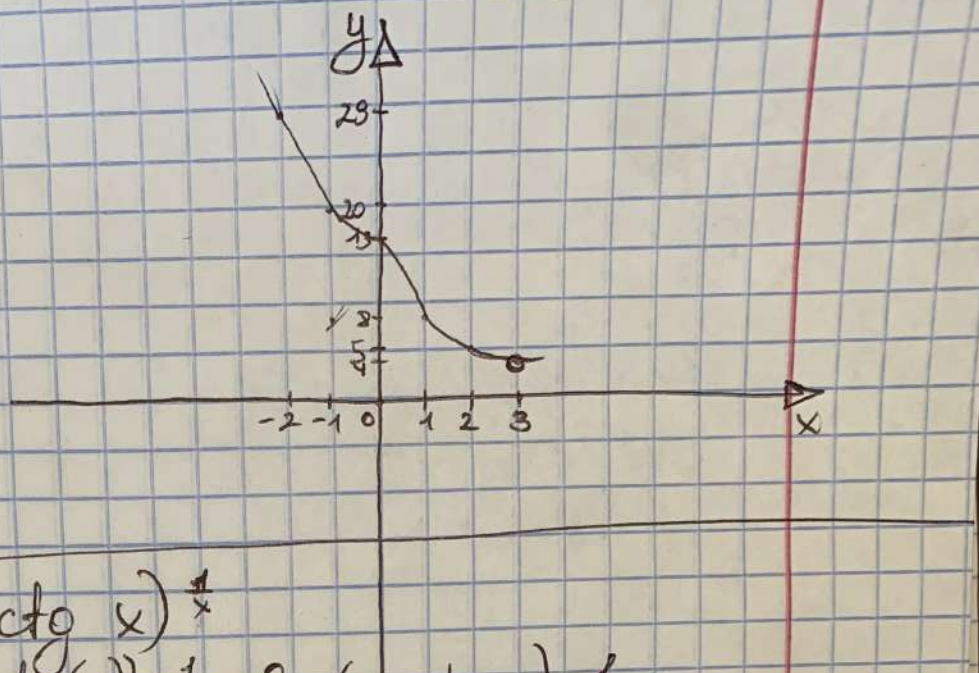
③. $y = \frac{x^2 - 6x + 13}{x - 3}$

$x - 3 \neq 0$

$x \neq 3$

| x | -1 | 1 | 0 | -1 | -2 | 3 |
|---|---|---|---|---|---|---|
| y | 8 | 5 | 13 | 20 | 28 | 4 |




②. 2) $y = (\operatorname{arctg} x)^{\frac{1}{x}}$

$y' = e^{\ln(\operatorname{arctg}(x)) \cdot \frac{1}{x}} \cdot \ln(\operatorname{arctg} x) \cdot \frac{1}{x} =$

$= e^{\ln(\operatorname{arctg}(x)) \cdot \frac{1}{x}} \cdot \frac{1}{\operatorname{arctg} x} \cdot \frac{1}{1+x^2} \cdot \frac{1}{x} + \ln(\operatorname{arctg}(x)) \cdot$

$\cdot \left(-\frac{1}{x^2}\right).$