

① True

② False

③ True

④ True

⑤ False

⑥ True

⑦ True

⑧ False

⑨ $\frac{(x-3)(x^2+2)}{3(x-1)}$

⑩ 1, 3

⑪ 4, -5

⑫ $\frac{1}{2x}$

⑬ $(0, \infty)$

⑭ $\mathbb{R} - \{0, 4\}$

⑮ \mathbb{R}

⑯ $4^{1/2} = x+1$

⑰ $\log_{\pi}(42) = 3x^2$

⑱ $\log_6\left(\frac{xz}{y}\right)$

⑲ $2\log_{12}(x) + \log_{12}(y) - \log_{12}(z)$

⑳ $\frac{\log_{10}(x)}{\log_{10}(4)}$

㉑ (greatest integer less than
3

~~①~~

㉒ $\log_2\left(\frac{10x}{x-1}\right) = 14$

$$\frac{10x}{x-1} = 2^{14}$$

$$10x = 2^{14}(x-1)$$

$$10x - 2^{14}x = -2^{14}$$

$$x(10 - 2^{14}) = -2^{14}$$

$$x = \frac{-2^{14}}{10 - 2^{14}}$$

㉓ $e^x + 7 = 3e^x$

$$7 = 2e^x$$

$$\frac{7}{2} = e^x$$

$$\log_e\left(\frac{7}{2}\right) = x$$

㉔ $256\left(\frac{1}{2}\right)^t$

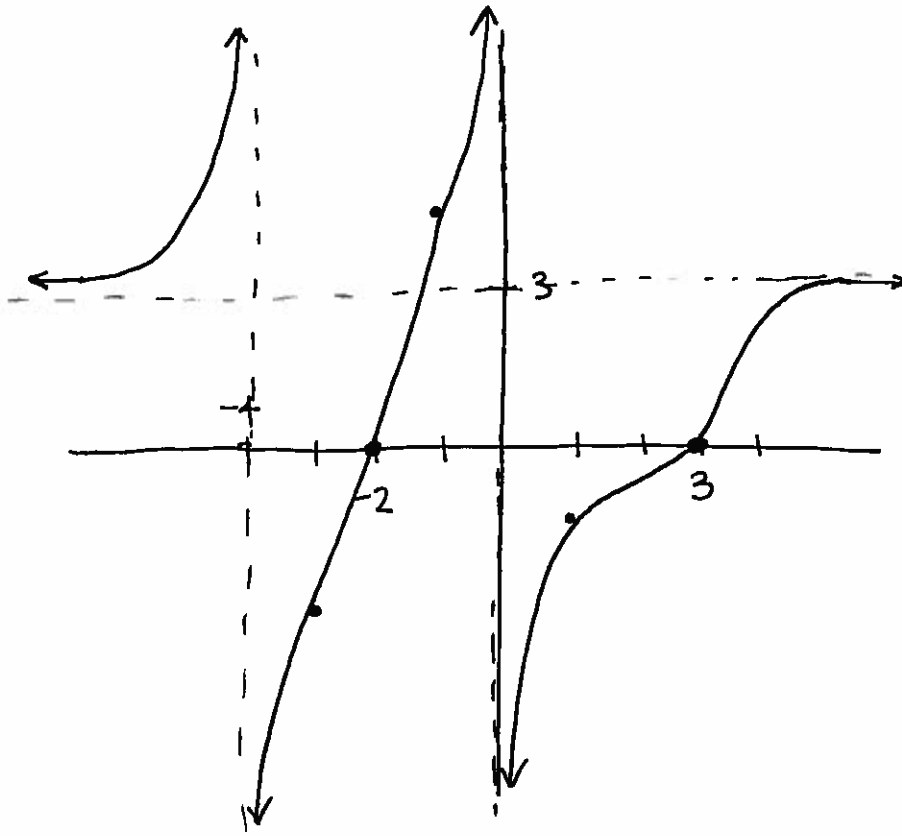
㉕ $\frac{a^{12}}{a^2} = \boxed{a^{10}}$

㉖ $f(4) = 4^2 + 1 = 17$

~~①~~

$\log_{10}(1025)$

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x -int: $3, -2$

VA: $0, -4$

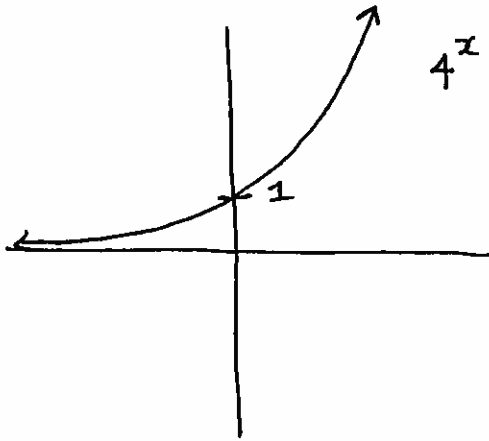
EB: $\frac{3x^2}{x^2} = 3$

$f(-3) = \frac{3(-6)(-1)}{(-3)(1)} = -6$

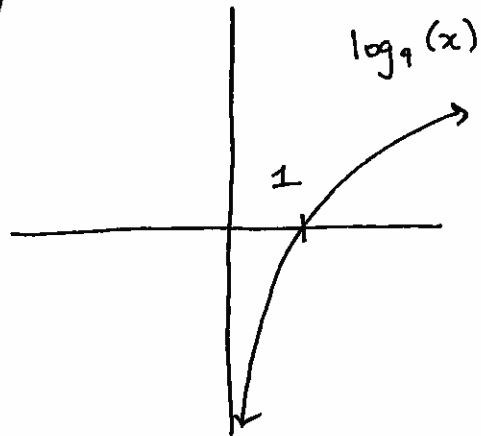
$f(-1) = \frac{3(-4)(1)}{(-1)(3)} = 4$

$f(1) = \frac{3(2)(3)}{(1)(5)} = \frac{-18}{5}$

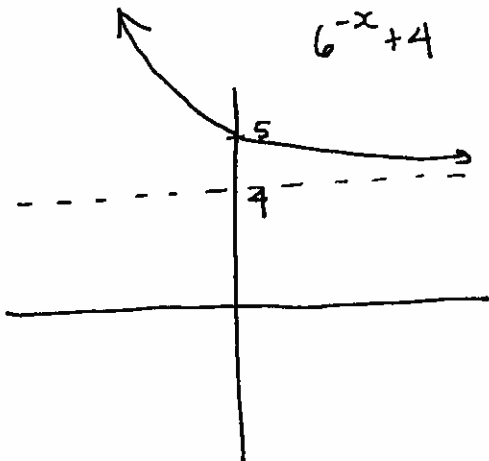
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