10. [9 points] For each part of this problem, circle all of the expressions which could be formulas for the function described. There could be more than one answer for each part.

a. [3 points] The function $f(x)$ satisfies $\lim_{x \to -\infty} f(x) = +\infty$. Then $f(x)$ could be:

7$x$ tan$(5\pi x)$ $3^{-x}$ $x^4 + 6$ 

ln$(10x - 1)$ sin$\left(\frac{\pi}{2}(x + 1)\right)$ NONE OF THESE

b. [3 points] The function $k(x)$ has a vertical asymptote at $x = \frac{1}{10}$. Then $k(x)$ could be:

7$x$ tan$(5\pi x)$ 3$^{-x}$ $x^4 + 6$ 

ln$(10x - 1)$ sin$\left(\frac{\pi}{2}(x + 1)\right)$ NONE OF THESE

c. [3 points] The function $j(x)$ is periodic with period 4. Then $j(x)$ could be:

7$x$ tan$(5\pi x)$ 3$^{-x}$ $x^4 + 6$ 

ln$(10x - 1)$ sin$\left(\frac{\pi}{2}(x + 1)\right)$ NONE OF THESE