(a) $\lim_{x\to\infty} \arctan(7x) = \frac{\pi}{2}$, so $\lim_{x\to\infty} e^{\arctan(7x)} = e^{\pi/2}[\approx 4.81]$,so $y = e^{\pi/2}$ is a HA. $\lim_{x\to-\infty} e^{\arctan(7x)} = e^{-\pi/2}[\approx 0.21]$,so $y = e^{-\pi/2}$ is a HA.

(b) $f(x) = e^{\arctan(7x)} \quad \Rightarrow \quad f'(x) = e^{\arctan(7x)} \cdot \dfrac{7}{1+49x^2} > 0$ for all x. Thus, f is increasing on $\mathbb{R}$.

(c)
$$\begin{aligned} f''(x) &= e^{\arctan(7x)}\left[\frac{-686x}{(1+49x^2)^2}\right] + \frac{7}{1+49x^2} \cdot e^{\arctan(7x)} \cdot \frac{7}{1+49x^2} \\ &= \frac{7e^{\arctan(7x)}}{(1+49x^2)^2}(-98x+7) \end{aligned}$$

$f''(x) > 0 \quad \Leftrightarrow \quad -98x + 7 > 0 \quad \Leftrightarrow \quad x < 0.07$ and $f''(x) < 0 \quad \Leftrightarrow$ $x > 0.07$, so f is CU on $(-\infty, 0.07)$ and f is CD on $(0.07, \infty)$. There is an inflection point at $(0.07, f(0.07)) = (0.07, e^{\arctan(0.49)})$ $\approx (0.07, 1.58)$.

(d)