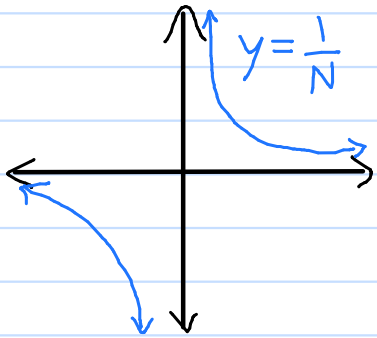
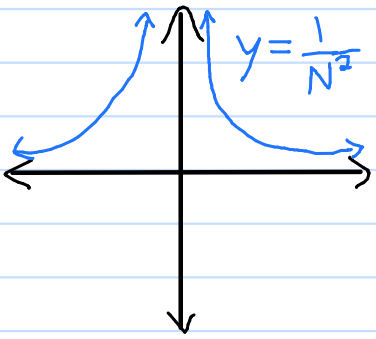
MA1620 Lesson 8: Improper Integrals (Limit Review)

① 

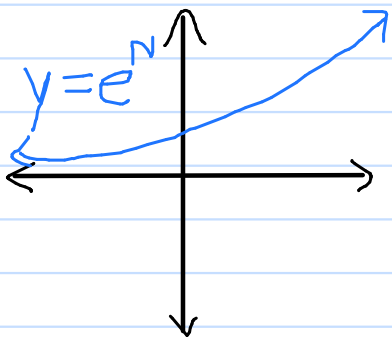
$$\lim_{N\to-\infty}\left(\frac{1}{N}\right)=0$$

$$\lim_{N\to+\infty}\left(\frac{1}{N}\right)=0$$

② 

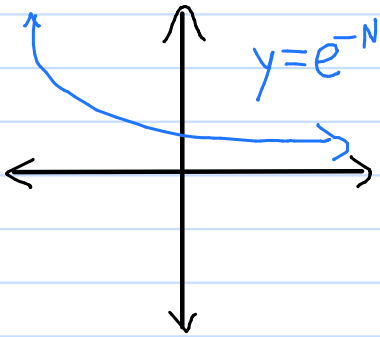
$$\lim_{N\to-\infty}\left(\frac{1}{N^2}\right)=0$$

$$\lim_{N\to+\infty}\left(\frac{1}{N^2}\right)=0$$

③ 

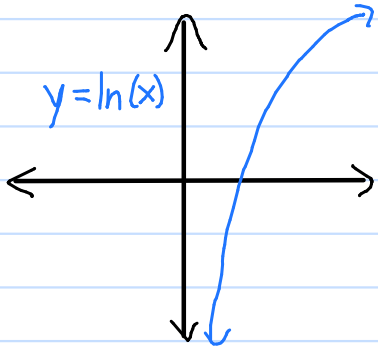
$$\lim_{N\to-\infty}\left(e^N\right)=0$$

$$\lim_{N\to+\infty}\left(e^N\right)=\infty \longrightarrow \text{diverges}$$

④ 

$$\lim_{N\to-\infty}\left(e^{-N}\right)=\infty \longrightarrow \text{diverges}$$

$$\lim_{N\to+\infty}\left(e^{-N}\right)=0$$

⑤ 

$$\lim_{N\to0^+}\left(\ln(x)\right)=-\infty \longrightarrow \text{diverges}$$

$$\lim_{N\to+\infty}\left(\ln(x)\right)=\infty \longrightarrow \text{diverges}$$