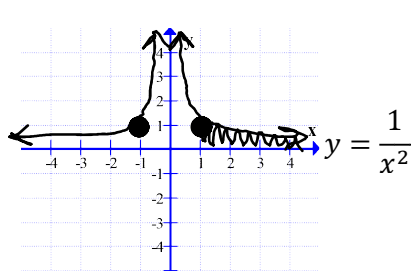


C12 - 5.0 - Ind Int/Div/Converging



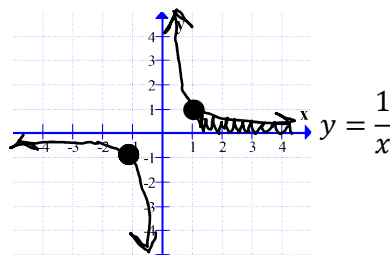
$$\int_1^{\infty} \frac{1}{x^2} dx$$

$$= -\frac{1}{x} \Big|_1^{\infty}$$

$$= -\frac{1}{\infty} - \left(-\frac{1}{1}\right)$$

$$= 0 + 1$$

1 Converges



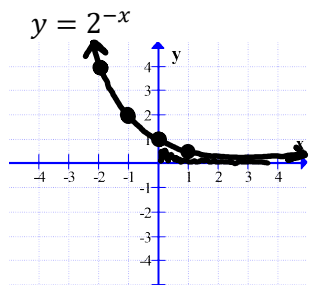
$$\int_1^{\infty} \frac{1}{x} dx$$

$$= \ln x \Big|_1^{\infty}$$

$$= \ln \infty - \ln 1$$

$$= \infty + 0$$

∞ Diverges



$$\int_0^{\infty} 2^{-x} dx = \left[\frac{-2^{-x}}{\ln 2} \right]_0^{\infty}$$

$$= \frac{-1}{2^{\infty} \ln 2} + \frac{1}{\ln 2}$$

$$= \frac{1}{\ln 2}$$

$\frac{1}{\ln 2}$ Converges