

$$1h. \quad \lim_{x \rightarrow 5} \frac{x-5}{|x-5|} = \text{DNE} \quad \because |x-5| = \begin{cases} x-5 & x-5 > 0 \\ -(x-5) & x-5 < 0 \end{cases}$$

$$\lim_{x \rightarrow 5^-} \frac{x-5}{|x-5|} = \lim_{x \rightarrow 5^-} \frac{x-5}{-(x-5)} = -1$$

$$\lim_{x \rightarrow 5^+} \frac{x-5}{|x-5|} = \lim_{x \rightarrow 5^+} \frac{x-5}{x-5} = 1$$

> Don't agree

40. Volume of Sphere

$$V = \frac{4}{3} \pi r^3$$

$$V' = \frac{dV}{dt} = 100 \text{ cm}^3/\text{min}$$

$$r' = \frac{dr}{dt} = ?$$

$$r = 4 \text{ cm}$$

$$\frac{dV}{dt} [V] = \frac{d}{dt} \left[ \frac{4}{3} \pi r^3 \right]$$

$$\frac{dV}{dt} = \frac{4}{3} \pi \cdot 3r^2 \cdot \frac{dr}{dt}$$

$$\frac{dV}{dt} = 4\pi r^2 \frac{dr}{dt}$$

$$100 = 4\pi 4^2 \frac{dr}{dt}$$

$$\frac{100}{48\pi} = \frac{dr}{dt}$$

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