

$$3. \lim_{(x,y) \rightarrow (4,1)} (x^2 - 2xy)$$

$$= 4^2 - 2(4)(1)$$

$$= 16 - 8$$

$$= 8$$

CONTINUOUS: $\left\{ (x,y) \mid \begin{array}{l} x \text{ IS A} \\ \text{REAL \#} \\ y \text{ IS A} \\ \text{REAL \#} \end{array} \right\}$

$$4. \lim_{(x,y) \rightarrow (5,2)} \left(\frac{x^2}{y-1} \right)$$

$$= \frac{5^2}{2-1}$$

$$= 25$$

$$y-1=0$$

$$y=1$$

CONT: $\left\{ (x,y) \mid y \neq 1, x \text{ IS ANY REAL \#} \right\}$

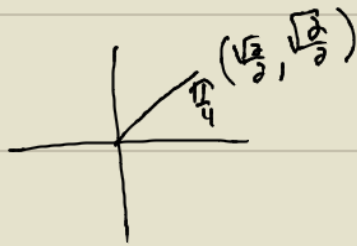
$$5. \lim_{(x,y) \rightarrow \left(\frac{1}{4}, \pi\right)} (x^2 \sin(xy))$$

$$= \left(\frac{1}{4}\right)^2 \sin\left(\frac{1}{4} \cdot \pi\right)$$

$$= \frac{1}{16} \sin \frac{\pi}{4}$$

$$= \frac{1}{16} \left(\frac{\sqrt{2}}{2}\right)$$

$$= \frac{\sqrt{2}}{32}$$



CONT: $\left\{ (x,y) \mid x \text{ IS ANY REAL \#, } y \text{ IS ANY REAL \#} \right\}$

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