

Instructions: You must show all work to receive full credit for the problems below. You may check your work with a calculator, but answers without work will receive minimal credit. Use exact answers unless the problem starts with decimals or you are specifically asked to round.

1. For the function $f(x, y) = 3^x + 7xy$, find $f(0, -2)$, $f(-2, 1)$, $f(2, 1)$.

2. State the domain and range of the function $f(x, y) = \sqrt{y - 3x}$. Write your domain in set notation, and the range in interval notation.

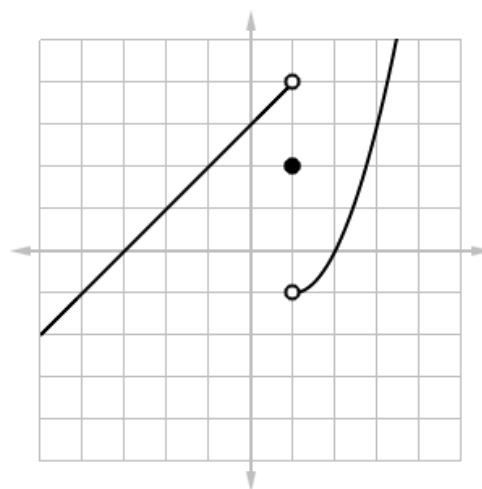
3. Find the following limits using the graph.

a. $\lim_{x \rightarrow 1^-} F(x)$

b. $\lim_{x \rightarrow 1^+} F(x)$

c. $\lim_{x \rightarrow 1} F(x)$

d. $F(1)$



4. Use numerical methods to find the value of $\lim_{x \rightarrow 0} \frac{e^x - 1}{x^2 - 2x}$.