

1. Write as a single logarithm.

$$5 \log(x) - 2 \log(y + 1)$$

$$\log(x^5) - \log(y + 1)^2$$

$$\log\left(\frac{x^5}{(y + 1)^2}\right)$$

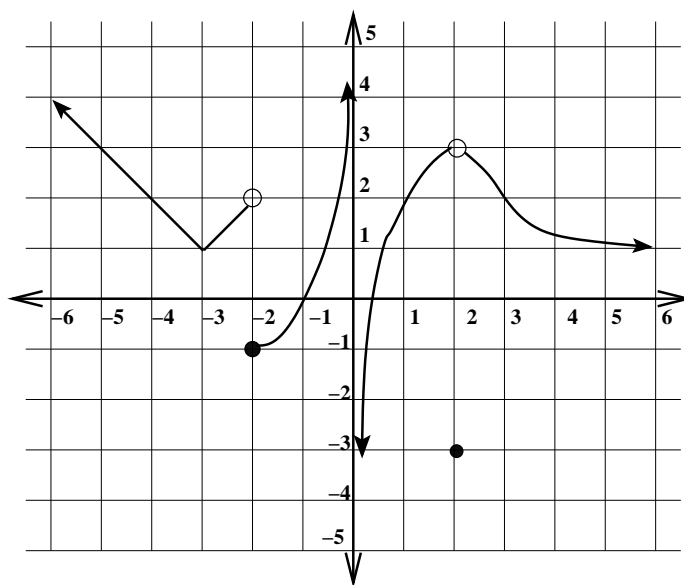
2. Use the graph of $f(x)$ to evaluate these limits:

a) $\lim_{x \rightarrow -2^-} f(x) = 2$

b) $\lim_{x \rightarrow 0} f(x) = DNE$

c) $\lim_{x \rightarrow \infty} f(x) = 1$

d) $\lim_{x \rightarrow 3} f(x) = 2$



3. Evaluate $\lim_{x \rightarrow 4} \frac{x^2 + x - 20}{x^3 - 4x^2} =$

$$\lim_{x \rightarrow 4} \frac{(x - 4)(x + 5)}{(x - 4)x^2} = \lim_{x \rightarrow 4} \frac{x + 5}{x^2} = \frac{9}{16} = 0.5625$$