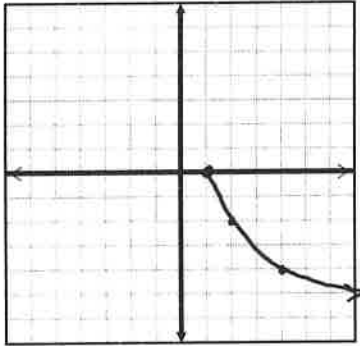


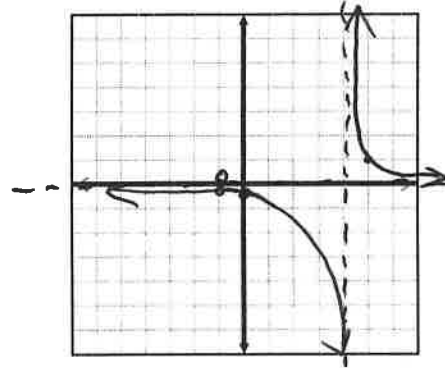
Cumulative Review D

Graph.

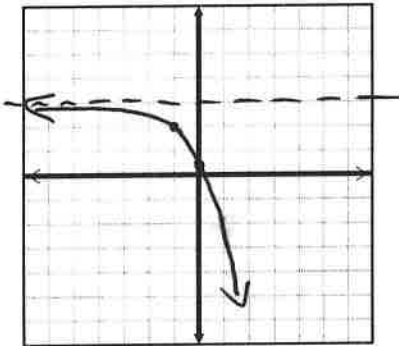
1) $f(x) = -2\sqrt{x-1}$



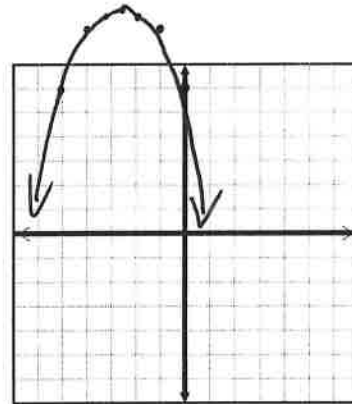
2) $f(x) = \frac{x+1}{x^2-3x-4} = \frac{1}{x-4}$



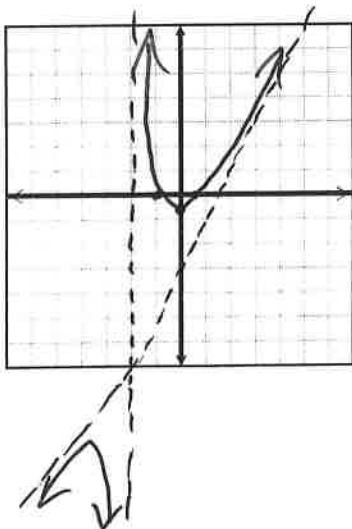
3) $f(x) = -e^{x+1} + 3$



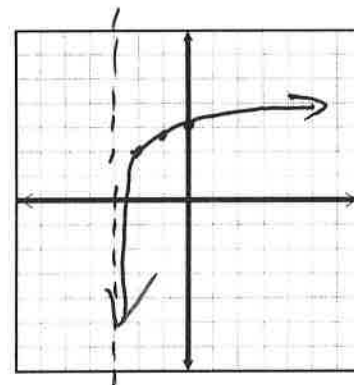
4) $f(x) = -x^2 - 5x + 6$



5) $f(x) = \frac{2x^2 + x - 1}{x + 2}$

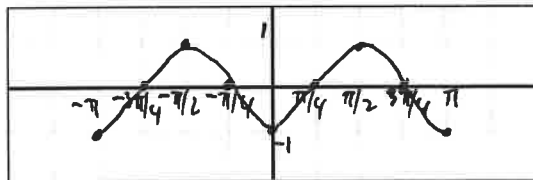


6) $f(x) = \ln(x+3) + 2$

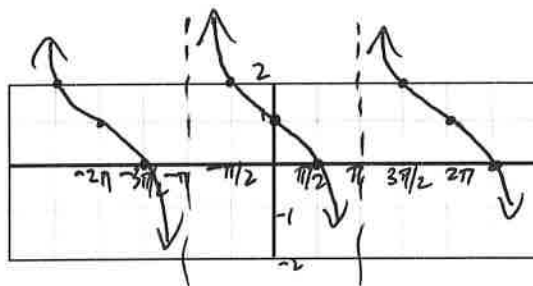


Graph one or more periods. Be sure to label all units.

7) $y = \cos(2x + \pi)$



8) $y = -\tan\left(\frac{x}{2}\right) + 1$



Find the limit.

9) $\lim_{x \rightarrow 2} \frac{x^2 + 2x - 8}{x^3 - 8}$

$\frac{1}{2}$

10) $\lim_{x \rightarrow -\infty} \frac{x+2}{3x^2 + 2x - 1}$

0

11) $\lim_{x \rightarrow 7} \frac{\sqrt{x+2} - 3}{x-7}$

$\frac{1}{6}$

12) $\lim_{x \rightarrow 2^+} \frac{x^2 - 5x + 6}{x-2}$

-1

Use the definition of continuity to determine for what numbers, if any, the given function is discontinuous.

13) $f(x) = \frac{x-1}{x^2 + 3x - 4}$

$a = 1$

I. $f(1) = \text{und.}$

II. $\lim_{x \rightarrow 1} f(x) = \frac{1}{5}$

III. $f(1) \neq \lim_{x \rightarrow 1} f(x)$

f is continuous at all values

except $x = 1, -4$.

$a = -4$

I. $f(-4) = \text{und.}$

II. $\lim_{x \rightarrow -4} f(x) = \text{DNE}$

III. $f(-4) \neq \lim_{x \rightarrow -4} f(x)$

14) $f(x) = \begin{cases} \frac{x^2 - 4}{x-2} & \text{if } x \neq 2 \\ x+1 & \text{if } x = 2 \end{cases}$

$a = 2$

I. $f(2) = 3$

II. $\lim_{x \rightarrow 2} f(x) = 4$

III. $f(2) \neq \lim_{x \rightarrow 2} f(x)$

f is continuous at all values except $x = 2$.