

9) $h(x) = \frac{2x}{x+3}$

1. Domain $(-\infty, -3) \cup (-3, \infty)$

2. x-int $x=0$

y-int $y=0$

3. HA

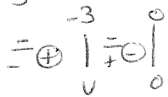
$\lim_{x \rightarrow \infty} \frac{2x}{x} = 2^+$

$\lim_{x \rightarrow -\infty} \frac{2x}{x} = 2^-$

$y=2$ HA.

4. VA

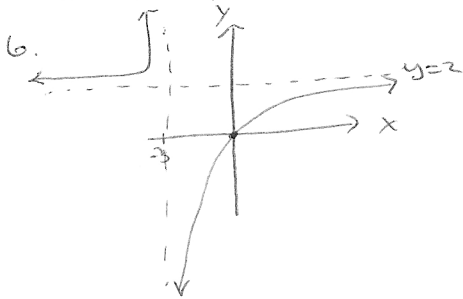
$x=-3$



$\lim_{x \rightarrow -3^-} h(x) \rightarrow \infty$

$\lim_{x \rightarrow -3^+} h(x) \rightarrow -\infty$

5. $x=-3$ infinite discontinuity



10) $f(x) = \frac{16-x^2}{x^2-x-20} = \frac{(4-x)(4+x)}{(x-5)(x+4)} = \frac{4-x}{x-5}$

1. Domain $(-\infty, -4) \cup (-4, 5) \cup (5, \infty)$

2. x-int $x=4$

y-int $y=-4/5$

3. HA

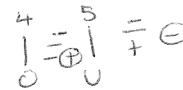
$\lim_{x \rightarrow \infty} \frac{-x^2}{x^2} = -1$

$\lim_{x \rightarrow -\infty} \frac{-x^2}{x^2} = -1$

$y=-1$

4. VA

$x=5$



$\lim_{x \rightarrow 5^-} f(x) \rightarrow \infty$

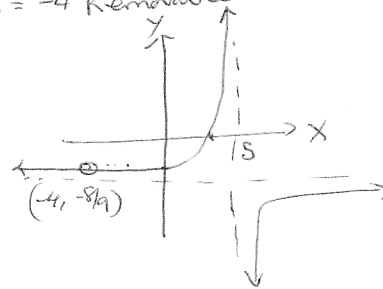
$\lim_{x \rightarrow 5^+} f(x) \rightarrow -\infty$

5. $x=5$ Infinite discontinuity

$x=-4$ Removable discontinuity

$x=-4, y=-8/9$

6.



7. Range $(-\infty, -1) \cup (-1, -8/9) \cup (-8/9, \infty)$