

V.A
 ↓
 take the D
 ↓ Factor it if needed
 equal it to 0
 ↓

Solve for X → check if the x-value
 make the N = 0
 ↓
 if yes, there will a hole

Compare degrees of N & D

H.A (standard form preferred N & D)
 ↓
 N = D divide coefficient
 N < D y = 0 x-axis
 N > D No H.A

p 95 # 9-10 Find D

9 $f(x) = x^2 + 4$ → up 4

D: $(-\infty, \infty)$

R: $[4, \infty)$

10 $f(x) = \frac{5}{x-3}$ ← Rational

D: $(-\infty, 3) \cup (3, \infty)$

$x-3 \neq 0$
 $x \neq 3$

p 95 # 9-10 Find D

9 $f(x) = x^2 + 4$

D $(-\infty, \infty)$

R $[4, \infty)$

10 $\frac{5}{x-3}$ Rational

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D $(-\infty, 3) \cup (3, \infty)$

p 95 # 55-62 V.A & H.A

55

$\frac{1x}{1x-1}$

V.A $x-1=0$, $x=1$

H.A $y = \frac{1}{1} = 1$ $y=1$

56

$g(x) = \frac{x-1}{x}$

V.A $x=0$

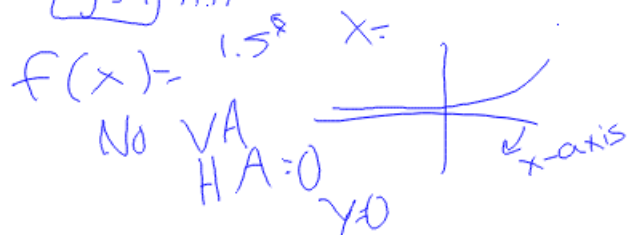
H.A $y=1$

57

$\frac{1x+2}{3-x}$

$3-x=0$
 $x=3$ V.A

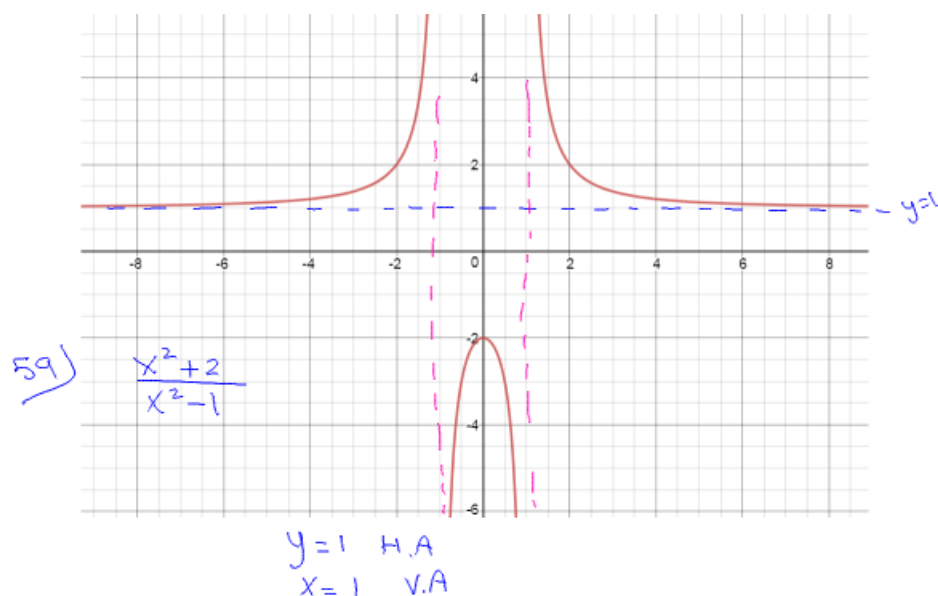
$y=-1$ H.A



$f(x) = 1.5^x + 3$

No V.A

H.A $y=3$



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

H.A. $y=1$

V.A. $x^2-1=0$

$\sqrt{x^2} = \sqrt{1}$
 $x = \pm 1$

$x=1$ V.A.

60) $P(x) = \frac{4}{x^2+1}$

H.A. $= 0$

V.A. = none

$x=-1$

$x^2+1=0$
 $-1, -1$
 $x^2=-1$

61) $g(x) = \frac{4x-4}{x^3-8}$

V.A. $= x = 2$

H.A. $= y = 0$

x-axis

$x^3-8=0$

$\sqrt[3]{x^3} = \sqrt[3]{8}$

$x=2$

V.A.

$2^3-8=0$

62

$$S(x) = \frac{2x-4}{\underbrace{x^2-4}}$$

$$x^2-4=0$$

$$\sqrt{x^2} = \sqrt{4}$$

$$x = \pm 2$$

$$x = 2$$

Plug 2 in the
N

hole at $x=2$

$$x = -2$$

V.A

$$\text{H.A } y = 0$$

$$\text{V.A } x = -2$$

hole at $x = 2$