p95 # 9-10, 11-16 Find Domain

11) $\frac{3x-1}{(x+3)(x-1)}$

type? Rational

Rest? yes

D cannot be 0

$(x+3)(x-1)=0$

$x \neq -3 \quad x \neq 1$

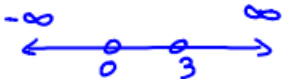
D: $(-\infty,-3) \cup (-3,1) \cup (1,\infty)$

12) $\frac{1}{x} + \frac{5}{x-3}$

$x \neq 0$

$x-3 \neq 0$

$x \neq 3$



D: $(-\infty,0) \cup (0,3) \cup (3,\infty)$

13) $\frac{x}{x^2-5x}$

Factor the D

$\frac{x}{x(x-5)}$

$x(x-5)=0$

$x \neq 0 \quad x \neq 5$

D: $(-\infty,0) \cup (0,5) \cup (5,\infty)$

$x=5$ V.A $x=0$ hole

14) $\frac{\sqrt{4-x^2}}{x-3}$ $x-3 \neq 0$, $x \neq 3$

what is under the $\sqrt{}$ has to be ≥ 0 ⊕ D cannot be 0

Factor $4-x^2 \geq 0$

$(2-x)(2+x) \geq 0$ P7

$4-3^2=-5$

$4-(5)^2 = 4-25 = -21$

D: $[-2,2]$

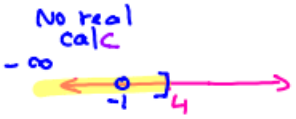
15) $\frac{\sqrt{4-x}}{(x+1)(x^2+1)}$

$x+1=0$, $x \neq -1$

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

No real calc

$4-x \geq 0$, $+x \quad +x$, $4 \geq x$, $x \leq 4$



D: $(-\infty,-1) \cup (-1,4]$

16) $\sqrt{x^4-16x^2}$

Factor $x^4-16x^2 \geq 0$

$x^2(x^2-16) \geq 0$

$(x+4)(x-4) \geq 0$

$(-\infty,-4] \cup [4,\infty)$ and $\{0\}$

$\sqrt{0}=0$

$+ \quad - \quad +$

$- \quad + \quad -$

$(-5+4)(-5-4)$

$(-1)(-9)$

$+$