

1.5 BC p.88 #10-50 even

10)  $x=2$

12)  $x=1$

14) No vertical asymptote

16)  $s=5, -5$

18)  $f(x) = \sec(\pi x) = \frac{1}{\cos(\pi x)}$

$\pi x = \cos^{-1}(0)$

$\cos(\pi x) = 0$  when  $\pi x = \pi/2$

so  $x = \frac{1}{2}, \frac{3}{2}, \frac{5}{2}, \dots$

so  $x = \frac{2k+1}{2}$ ,  $k$  is any integer

20)  $g(x) = \frac{\frac{1}{2}x^3 - x^2 - 4x}{3x^2 - 6x - 24}$

$g(x) = \frac{\frac{1}{2}x[x^2 - 2x - 8]}{3[x^2 - 2x - 8]} = \boxed{\frac{x}{6}} \rightarrow$  No vertical asymptote.

22) VA:  $x=0, x=3$

24) VA: none

26) VA:  $t=-2$

28)  $g(\theta) = \frac{\tan \theta}{\theta} = \frac{\sin \theta}{\cos \theta} \cdot \frac{1}{\theta}$  since  $\lim_{\theta \rightarrow 0} \frac{\sin \theta}{\theta} \cdot \frac{1}{\cos \theta} = 1$

NO V.A.

30)  $f(x) = \frac{x^2 - 6x - 7}{x+1} = \frac{(x-7)(x+1)}{(x+1)}$

No V.A., Hole at  $x=-1$

32) hole at  $x = -1$

34)  $-\infty$

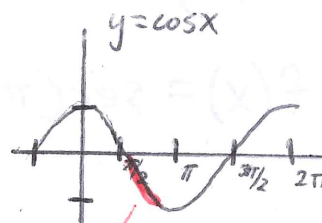
36)  $\frac{1}{2}$

38)  $\frac{5}{8}$

40)  $\frac{1}{9}$

42)  $+\infty$

$$44) \lim_{x \rightarrow \pi/2^+} \frac{-2}{\cos x} = \frac{-2}{0} \rightarrow \frac{(-)}{(-)} = \boxed{+\infty}$$



$$46) \lim_{x \rightarrow 0} \frac{(x+2)}{\cot x} = \lim_{x \rightarrow 0} (x+2) \tan x = (0+2)(\tan 0) = \boxed{0}$$

$$48) \lim_{x \rightarrow \frac{1}{2}} x^2 \tan(\pi x) = \left(\frac{1}{2}\right)^2 \tan\left(\frac{\pi}{2}\right) = \text{undefined}$$

$$50) f(x) = \frac{x^3 - 1}{x^2 + x + 1} = \frac{(x-1)(x^2 + x + 1)}{(x^2 + x + 1)} = x - 1$$

$$\lim_{x \rightarrow 1^-} f(x) = \lim_{x \rightarrow 1^-} x - 1 = 1 - 1 = \boxed{0}$$