

TB pg. 84-85 # 11-26

11. a) yes
b) yes
c) yes
d) yes

12. a) yes
b) yes
c) no
d) no

13. a) no
b) no

14. $(0, 1) \cup (1, 2) \cup (2, 3)$
 $(-1, 0)$

15. $f(2) = 0$

16. $f(1) = 2$

17. no, its a jump, its nonremovable

18. yes, its a removable
 $f(3) = 0$

19. a) discontinuity @ $x = 2$

b) its a jump,

nonremovable - one-sided limits are different

20. a) ~~no discontinuities~~ Hole at $x = 2$
 $f(2) = 1$

21. a) discontinuity @ $x = 1$

b) infinite - nonremovable

22. a) ~~no discontinuities~~ Hole at $x = -1$
 $f(-1) = 0$

23. a) discontinuity @ $x = 1$, $x = 0$

b) jump, non-removable - diff one-sided limits
hole, removable

24. a) discontinuity @ $x = 1$, $x = 2$

b) jump @ $x = 1$ non-removable, hole @ $x = 2$ removable
 $f(2) = 1$

$$25. f(x) = \begin{cases} \frac{x^2 - 9}{x + 3}, & x \neq -3 \end{cases}$$

$$\frac{\cancel{x+3}(x-3)}{\cancel{x+3}}$$

$$\begin{cases} -6 \\ \text{or} \\ x-3 \end{cases}, x = -3$$

$$26. f(x) = \begin{cases} \frac{x^3 - 1}{x^2 - 1}, & x \neq 1 \end{cases}$$

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

$$\begin{cases} 3/2 \\ \text{or} \\ \frac{x^2+x+1}{x+1} \end{cases}, x = 1$$