

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, it's a jump, it's nonremovable

18. yes, it's a removable
 $f(3) = 0$

19. a) discontinuity @ $x=2$

b) it's a jump,

nonremovable - one-sided limits are different

20. a) no discontinuities

21. a) discontinuity @ $x=1$

b) infinite - nonremovable

22. a) no discontinuities

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

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

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

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

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

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

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