

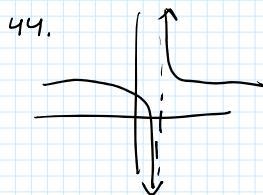
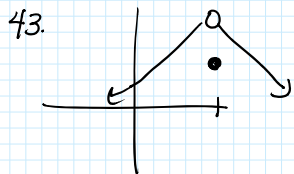
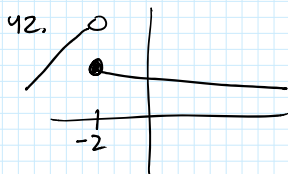
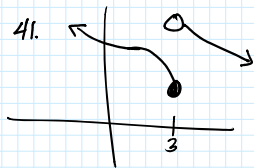
24. a)  $x=1, 2$   
 b)  $x=2$  is removable if  $f(2)=1$   
 $x=1$  is not removable - Jump

25.  $f(x) = \frac{x^2-9}{x+3} = \frac{(x+3)(x-3)}{x+3}$  at  $x=-3$   
 $y = x-3$  is continuous at  $x=-3$

26.  $f(x) = \frac{x^3-1}{x^2-1}$   $x=1$

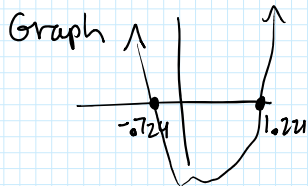
$f(x) = \frac{(x-1)(x^2+x+1)}{(x-1)(x+1)}$

$f(x) = \frac{x^2+x+1}{x+1}$  is continuous at  $x=1$



45.  $x = x^4 - 1$  ?

$x^4 - x - 1 = 0$



47.  $f(x) = \begin{cases} x^2-1, & x < 3 \\ 2ax, & x \geq 3 \end{cases}$

$\lim_{x \rightarrow 3^-} f(x) = 3^2 - 1 = 8$

$2a(3) = 8$

$6a = 8$

$a = \frac{4}{3}$

50.  $f(x) = \begin{cases} x^2 + x + a, & x < 1 \\ x^3, & x \geq 1 \end{cases}$

$f(1) = 1^3 = 1$  So

$1^2 + 1 + a = 1$

$2 + a = 1$

$a = -1$

54. False

Continuous functions are continuous on their domain but can have discontinuities where they don't exist.

55. False

56. B

57. E

58. A

59. E

AP Prep

①  $\lim_{x \rightarrow 3} \frac{(x+2)(x-3)}{x-3}$

$\lim_{x \rightarrow 3} x+2 = 5$  (D)

② A

③ E