

Answers to CHAPTER 1 Tests

Test Form A

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|-------|-------|-------|-------|
| 1. b | 2. d | 3. a | 4. a |
| 5. d | 6. c | 7. b | 8. b |
| 9. d | 10. a | 11. c | 12. a |
| 13. b | 14. a | 15. c | 16. a |
| 17. d | 18. b | 19. b | 20. c |

Test Form B

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|-------|-------|-------|-------|
| 1. c | 2. c | 3. d | 4. b |
| 5. a | 6. b | 7. b | 8. d |
| 9. e | 10. c | 11. b | 12. b |
| 13. a | 14. d | 15. a | 16. c |
| 17. b | 18. a | 19. c | 20. b |

Test Form C

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|-------|-------|-------|-------|
| 1. c | 2. d | 3. b | 4. b |
| 5. a | 6. a | 7. a | 8. b |
| 9. d | 10. c | 11. b | 12. c |
| 13. a | 14. a | 15. c | 16. d |
| 17. a | 18. c | 19. a | 20. a |

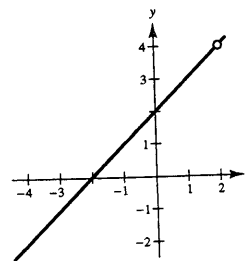
Test Form D

1. -3 2. 0.001 3. 5 4. 0 5. 5
6. $-\frac{7}{6}$ 7. $\frac{1}{12}$ 8. $\frac{1}{2\sqrt{x}}$ 9. Does not exist
10. $-\sqrt{3}$ 11. $\frac{1}{3}$ 12. $\sqrt{3}$ 13. $-\infty$
14. $+\infty$ 15. ∞
16. $x = 2$, removable; $x = -2$, nonremovable
17. a. $\frac{5}{x^4 - 1}$ b. -1, 1 18. 27 19. $x = -7$
20. $x = \frac{-1 - \sqrt{5}}{2}$, $x = \frac{-1 + \sqrt{5}}{2}$

Test Form E

1. The limit does not exist.
2. False. $f(x) = \begin{cases} x^2, & x \neq 3 \\ 0, & x = 3 \end{cases}$
3. -3 4. 0 5. $-\pi$ 6. 5

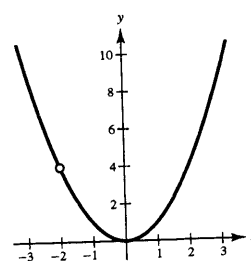
7. a.



b. 4 c. 4

8. a. 4 b. $g(x) = x^2$

c.

9. $\frac{1}{2\sqrt{x+2}}$ 10. $2x - 2$ 11. -112. $\frac{1 - \sqrt{5}}{2}$ 13. $((2n - 1)\pi, (2n + 1)\pi)$ where n is an integer

14. $f(x)$ is continuous on the interval $(-\infty, \infty)$.
 $f(-2) = 2 > 0$ and $f(-1) = -4 < 0$.
 Therefore, there exists a real number c ,
 $-2 < c < -1$, such that $f(c) = 0$.

15. -2 and 2

16. a. 1 b. -3 c. The limit does not exist.

17. $3; \lim_{x \rightarrow 0} \frac{\sin 3x}{x} = \lim_{x \rightarrow 0} \frac{3 \sin 3x}{3x} = 3 \left(\lim_{x \rightarrow 0} \frac{\sin 3x}{3x} \right)$
 $= 3(1) = 3$

18. $x = -3$ 19. $-\infty$ 20. $-\infty$