

ne _____ Date _____

1. Evaluate: $\lim_{x \rightarrow \infty} \frac{7x-1}{2x}$

2. Evaluate the given limit (if it exists):

$$\lim_{x \rightarrow \infty} \frac{x^2 - 1}{5x^{10} - 3}$$

3. Evaluate the given limit (if it exists):

$$\lim_{x \rightarrow \infty} (x+2)^{-2}$$

4. Evaluate the given limit (if it exists):

$$\lim_{x \rightarrow \infty} \frac{5x^3}{x^2 + 4}$$

5. Evaluate the given limit (if it exists):

$$\lim_{x \rightarrow \infty} \left(\frac{2x^2}{x-1} + \frac{3x}{x+1} \right)$$

6. Evaluate the given limit (if it exists):

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

7. Evaluate: $\lim_{n \rightarrow \infty} \frac{2n^2 - 3n + 4}{3n^2 + 2n + 5}$

Evaluate: $\lim_{x \rightarrow \infty} \frac{x+2}{3x^2 + 2x - 8}$

9. $\lim_{h \rightarrow \infty} \frac{3}{\sqrt{h-4}}$ is

10. $\lim_{x \rightarrow \infty} \frac{2x+1}{x}$ is

11. $\lim_{x \rightarrow \infty} \frac{5x^2}{9-x^2}$ is

12. $\lim_{x \rightarrow \infty} \frac{5x^4 + 3x^3 + 2x^2 + 1}{4x^4 + 5}$ is

13. $\lim_{x \rightarrow \infty} \frac{x}{(x+2)(x-3)}$ is

14. $\lim_{x \rightarrow \infty} \frac{x^2}{(1-x)(1+x)}$ is

15. $\lim_{x \rightarrow \infty} \frac{2-2^x}{5-5^x}$ is

1. 7/8 2. 0 3. 0 4. ∞ 5. ∞
6. 5 7. 2/3 8. 0 9. 0 10. 2
11. -5 12. 5/4 13. 0 14. -1 15. 0

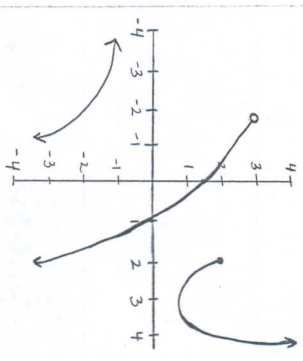
LIMITS PRACTICE WORKSHEET

- 1) $\lim_{x \rightarrow \infty} \frac{3x+2}{5x+3} =$
- 2) $\lim_{x \rightarrow \infty} \frac{3x^2-2}{2x^2+3} =$
- 3) $\lim_{x \rightarrow \infty} \frac{x+3}{3x^2+1} =$
- 4) $\lim_{x \rightarrow \infty} \frac{\sqrt{x^2+4}}{x+4} =$
- 5) $\lim_{x \rightarrow -\infty} \frac{\sqrt{x^2+4}}{x+4} =$
- 6) $\lim_{x \rightarrow \infty} \frac{2x^2+x-3}{x+5} =$
- 7) $\lim_{x \rightarrow \infty} \frac{x^4-5x^2+3}{3x^4+1} =$
- 8) $\lim_{x \rightarrow -3} (x^2+2) =$
- 9) $\lim_{x \rightarrow 2} \frac{x^2+1}{x+3} =$
- 10) $\lim_{x \rightarrow -2} \frac{x^2-4}{x+2} =$
- 11) $\lim_{x \rightarrow -1} \frac{x^2-2x-3}{x+1} =$
- 12) $\lim_{x \rightarrow 3} \frac{x}{x-3} =$
- 13) $\lim_{x \rightarrow 3} \frac{x^2}{9-x^2} =$
- 14) $\lim_{h \rightarrow 0} \frac{(4+h)^2-16}{h} =$
- 15) $\lim_{x \rightarrow 2^-} \frac{x+2}{x^2-4} =$
- 16) $\lim_{x \rightarrow 2^+} \frac{\sqrt{x^2+4}}{x-2} =$
- 17) $\lim_{x \rightarrow 1^+} \frac{\sqrt{x}-x}{x-1} =$

18) EVALUATE THE FOLLOWING LIMITS

FOR $f(x) = \begin{cases} -3+x, & x < 3 \\ x^2-3, & x \geq 3 \end{cases}$

- a) $\lim_{x \rightarrow 3^+} f(x)$
- b) $\lim_{x \rightarrow 3^-} f(x)$
- c) $\lim_{x \rightarrow 3} f(x)$



- (i) $\lim_{x \rightarrow 2} f(x) =$
- (ii) $\lim_{x \rightarrow \infty} f(x) =$
- (iii) $\lim_{x \rightarrow -\infty} f(x) =$
- (iv) $\lim_{x \rightarrow 2^-} f(x) =$
- (v) $\lim_{x \rightarrow 2^+} f(x) =$
- (vi) $f(-2) =$
- (vii) $\lim_{x \rightarrow 0} f(x) =$

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|----------|-------------------------------------|--|--------------------------------------|--|--|--|--|
| 5.1 | (i) $\lim_{x \rightarrow 1} (x+1)$ | (ii) $\lim_{x \rightarrow 1} (x^2-2)$ | (iii) $\lim_{x \rightarrow 1} (x^3)$ | (iv) $\lim_{x \rightarrow 1} (x^2-2)$ | (v) $\lim_{x \rightarrow 1} (x^2-2)$ | (vi) $\lim_{x \rightarrow 1} (x^2-2)$ | (vii) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (1) $\lim_{x \rightarrow 1} (x+1)$ | (2) $\lim_{x \rightarrow 1} (x^2-2)$ | (3) $\lim_{x \rightarrow 1} (x^3)$ | (4) $\lim_{x \rightarrow 1} (x^2-2)$ | (5) $\lim_{x \rightarrow 1} (x^2-2)$ | (6) $\lim_{x \rightarrow 1} (x^2-2)$ | (7) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (8) $\lim_{x \rightarrow 1} (x+1)$ | (9) $\lim_{x \rightarrow 1} (x^2-2)$ | (10) $\lim_{x \rightarrow 1} (x^3)$ | (11) $\lim_{x \rightarrow 1} (x^2-2)$ | (12) $\lim_{x \rightarrow 1} (x^2-2)$ | (13) $\lim_{x \rightarrow 1} (x^2-2)$ | (14) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (15) $\lim_{x \rightarrow 1} (x+1)$ | (16) $\lim_{x \rightarrow 1} (x^2-2)$ | (17) $\lim_{x \rightarrow 1} (x^3)$ | (18) $\lim_{x \rightarrow 1} (x^2-2)$ | (19) $\lim_{x \rightarrow 1} (x^2-2)$ | (20) $\lim_{x \rightarrow 1} (x^2-2)$ | (21) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (22) $\lim_{x \rightarrow 1} (x+1)$ | (23) $\lim_{x \rightarrow 1} (x^2-2)$ | (24) $\lim_{x \rightarrow 1} (x^3)$ | (25) $\lim_{x \rightarrow 1} (x^2-2)$ | (26) $\lim_{x \rightarrow 1} (x^2-2)$ | (27) $\lim_{x \rightarrow 1} (x^2-2)$ | (28) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (29) $\lim_{x \rightarrow 1} (x+1)$ | (30) $\lim_{x \rightarrow 1} (x^2-2)$ | (31) $\lim_{x \rightarrow 1} (x^3)$ | (32) $\lim_{x \rightarrow 1} (x^2-2)$ | (33) $\lim_{x \rightarrow 1} (x^2-2)$ | (34) $\lim_{x \rightarrow 1} (x^2-2)$ | (35) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (36) $\lim_{x \rightarrow 1} (x+1)$ | (37) $\lim_{x \rightarrow 1} (x^2-2)$ | (38) $\lim_{x \rightarrow 1} (x^3)$ | (39) $\lim_{x \rightarrow 1} (x^2-2)$ | (40) $\lim_{x \rightarrow 1} (x^2-2)$ | (41) $\lim_{x \rightarrow 1} (x^2-2)$ | (42) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (43) $\lim_{x \rightarrow 1} (x+1)$ | (44) $\lim_{x \rightarrow 1} (x^2-2)$ | (45) $\lim_{x \rightarrow 1} (x^3)$ | (46) $\lim_{x \rightarrow 1} (x^2-2)$ | (47) $\lim_{x \rightarrow 1} (x^2-2)$ | (48) $\lim_{x \rightarrow 1} (x^2-2)$ | (49) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (50) $\lim_{x \rightarrow 1} (x+1)$ | (51) $\lim_{x \rightarrow 1} (x^2-2)$ | (52) $\lim_{x \rightarrow 1} (x^3)$ | (53) $\lim_{x \rightarrow 1} (x^2-2)$ | (54) $\lim_{x \rightarrow 1} (x^2-2)$ | (55) $\lim_{x \rightarrow 1} (x^2-2)$ | (56) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (57) $\lim_{x \rightarrow 1} (x+1)$ | (58) $\lim_{x \rightarrow 1} (x^2-2)$ | (59) $\lim_{x \rightarrow 1} (x^3)$ | (60) $\lim_{x \rightarrow 1} (x^2-2)$ | (61) $\lim_{x \rightarrow 1} (x^2-2)$ | (62) $\lim_{x \rightarrow 1} (x^2-2)$ | (63) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (64) $\lim_{x \rightarrow 1} (x+1)$ | (65) $\lim_{x \rightarrow 1} (x^2-2)$ | (66) $\lim_{x \rightarrow 1} (x^3)$ | (67) $\lim_{x \rightarrow 1} (x^2-2)$ | (68) $\lim_{x \rightarrow 1} (x^2-2)$ | (69) $\lim_{x \rightarrow 1} (x^2-2)$ | (70) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (71) $\lim_{x \rightarrow 1} (x+1)$ | (72) $\lim_{x \rightarrow 1} (x^2-2)$ | (73) $\lim_{x \rightarrow 1} (x^3)$ | (74) $\lim_{x \rightarrow 1} (x^2-2)$ | (75) $\lim_{x \rightarrow 1} (x^2-2)$ | (76) $\lim_{x \rightarrow 1} (x^2-2)$ | (77) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (78) $\lim_{x \rightarrow 1} (x+1)$ | (79) $\lim_{x \rightarrow 1} (x^2-2)$ | (80) $\lim_{x \rightarrow 1} (x^3)$ | (81) $\lim_{x \rightarrow 1} (x^2-2)$ | (82) $\lim_{x \rightarrow 1} (x^2-2)$ | (83) $\lim_{x \rightarrow 1} (x^2-2)$ | (84) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (85) $\lim_{x \rightarrow 1} (x+1)$ | (86) $\lim_{x \rightarrow 1} (x^2-2)$ | (87) $\lim_{x \rightarrow 1} (x^3)$ | (88) $\lim_{x \rightarrow 1} (x^2-2)$ | (89) $\lim_{x \rightarrow 1} (x^2-2)$ | (90) $\lim_{x \rightarrow 1} (x^2-2)$ | (91) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (92) $\lim_{x \rightarrow 1} (x+1)$ | (93) $\lim_{x \rightarrow 1} (x^2-2)$ | (94) $\lim_{x \rightarrow 1} (x^3)$ | (95) $\lim_{x \rightarrow 1} (x^2-2)$ | (96) $\lim_{x \rightarrow 1} (x^2-2)$ | (97) $\lim_{x \rightarrow 1} (x^2-2)$ | (98) $\lim_{x \rightarrow 1} (x^2-2)$ |
| ∞ | (99) $\lim_{x \rightarrow 1} (x+1)$ | (100) $\lim_{x \rightarrow 1} (x^2-2)$ | (101) $\lim_{x \rightarrow 1} (x^3)$ | (102) $\lim_{x \rightarrow 1} (x^2-2)$ | (103) $\lim_{x \rightarrow 1} (x^2-2)$ | (104) $\lim_{x \rightarrow 1} (x^2-2)$ | (105) $\lim_{x \rightarrow 1} (x^2-2)$ |