

SATPREPAssignment : *Limit*

Find the following limits:

1. $\lim_{x \rightarrow 2} (x^2 - x + 1)$

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

3. $\lim_{x \rightarrow 1} (\sqrt{10x-1})$

4. $\lim_{x \rightarrow 1} \left(\frac{x^2 - x - 2}{x - 2} \right)$

5. $\lim_{x \rightarrow 2} \left(\frac{x^2 - x - 2}{x - 2} \right)$

6. $\lim_{x \rightarrow 4} \left(\frac{\sqrt{x} - 2}{x - 4} \right)$

7. $\lim_{x \rightarrow -3} \left(\frac{x^2 - 9}{x + 3} \right)$

8. $\lim_{x \rightarrow -3} \left(\frac{x^2 - 9}{2x^2 + 7x + 3} \right)$

9. $\lim_{x \rightarrow 9} \left(\frac{\sqrt{x} - 3}{x - 9} \right)$

10. $\lim_{h \rightarrow 0} \left(\frac{(1+h)^2 - 1^2}{h} \right)$

11. $\lim_{h \rightarrow 0} \left(\frac{(3+h)^2 - 3^2}{h} \right)$

12. $\lim_{h \rightarrow 0} \left(\frac{(x+h)^2 - x^2}{h} \right)$

Find the following limits for the piecewise function: $f(x) = \begin{cases} x+1, & x < 2 \\ x^2 - 2, & 2 < x < 4 \\ \sqrt{x+5}, & x \geq 4 \end{cases}$

13. $\lim_{x \rightarrow 1^+} f(x)$

14. $\lim_{x \rightarrow 1^-} f(x)$

15. $\lim_{x \rightarrow 1} f(x)$

16. $f(1)$

17. $\lim_{x \rightarrow 2^+} f(x)$

18. $\lim_{x \rightarrow 2^-} f(x)$

19. $\lim_{x \rightarrow 2} f(x)$

20. $f(2)$

21. $\lim_{x \rightarrow 3^+} f(x)$

22. $\lim_{x \rightarrow 3^-} f(x)$

23. $\lim_{x \rightarrow 3} f(x)$

24. $f(3)$

25. $\lim_{x \rightarrow 4^+} f(x)$

26. $\lim_{x \rightarrow 4^-} f(x)$

27. $\lim_{x \rightarrow 4} f(x)$

28. $f(4)$

Answer

1. 3

2. 3

3. 3

4. 2

5. 3

6. $\frac{1}{4}$

7. -6

8. $\frac{6}{5}$

9. $\frac{1}{6}$

10. 2

11. 6

12. $2x$

13. 2

14. 2

15. 2

16. 2

17. 2

18. 3

19. DNE

20. DNE

21. 7

22. 7

23. 7

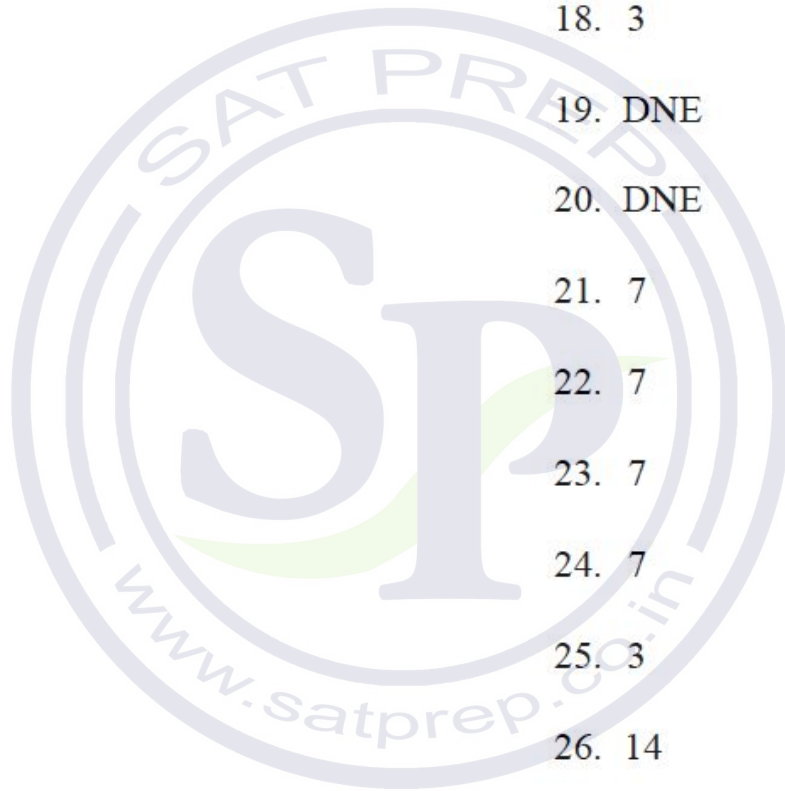
24. 7

25. 3

26. 14

27. DNE

28. 3



Answer

