

RD Sharma
Solutions
Class 11 Maths
Chapter 29
Ex 29.2

Limits Ex 29.2 Q1

$$\lim_{x \rightarrow 1} \frac{x^2 + 1}{x + 1} = \frac{(1)^2 + 1}{1 + 1} = \frac{1 + 1}{2} = \frac{2}{2} = 1$$

Limits Ex 29.2 Q2

$$\lim_{x \rightarrow 0} \frac{2x^2 + 3x + 4}{x^2 + 3x + 2} = \lim_{x \rightarrow 0} \frac{2x^2 + 3x + 4}{(x + 2)(x + 1)} = \frac{2(0) + 3(0) + 4}{(0 + 2)(0 + 1)} = \frac{4}{2} = 2$$

Limits Ex 29.2 Q3

$$\lim_{x \rightarrow 3} \frac{\sqrt{2x + 3}}{x + 3} = \frac{\sqrt{9}}{6} = \frac{1}{2}$$

Limits Ex 29.2 Q4

$$\lim_{x \rightarrow 1} \frac{\sqrt{x + 8}}{\sqrt{x}} = \frac{\sqrt{(1 + 8)}}{\sqrt{1}} = \sqrt{9} = 3$$

Limits Ex 29.2 Q5

$$\lim_{x \rightarrow a} \frac{\sqrt{x} + \sqrt{a}}{x + a} = \frac{\sqrt{a} + \sqrt{a}}{a + a} = \frac{2\sqrt{a}}{2a} = \frac{1}{\sqrt{a}}$$

Limits Ex 29.2 Q6

$$\lim_{x \rightarrow 1} \frac{1 + (x - 1)^2}{1 + x^2} = \frac{1 + 0^2}{1 + 1} = \frac{1}{2}$$

Limits Ex 29.2 Q7

$$\lim_{x \rightarrow 0} \frac{x^2 - 9}{x - 27} = \frac{-9}{-27} = \frac{1}{3}$$

Limits Ex 29.2 Q8

$$\lim_{x \rightarrow 0} 9 = 9$$

Limits Ex 29.2 Q9

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

Limits Ex 29.2 Q10

$$\lim_{x \rightarrow -1} (4x^2 + 2) = (4(-1)^2 + 2) = 6$$

Limits Ex 29.2 Q11

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

Limits Ex 29.2 Q12

$$\lim_{x \rightarrow 0} \frac{3x + 1}{x + 3} = \frac{3(0) + 1}{(0) + 3} = \frac{1}{3}$$

Limits Ex 29.2 Q13

$$\lim_{x \rightarrow 3} \frac{x^2 - 9}{x + 2} = \frac{3^2 - 9}{3 + 2} = 0$$

Limits Ex 29.2 Q14

$$\lim_{x \rightarrow 0} \frac{ax + b}{(x + d)} = \frac{a \times 0 + b}{(0 + d)} = \frac{b}{d}$$