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Class :- 11(Maths)

Date:- 04.03.2021

1. Evaluate the Given limit: $\lim_{x \rightarrow 3} x + 3$

Solution:

Given

$$\lim_{x \rightarrow 3} x + 3$$

Substituting $x = 3$, we get

$$= 3 + 3$$

$$= 6$$

2. Evaluate the Given limit: $\lim_{x \rightarrow \pi} \left(x - \frac{22}{7} \right)$

Solution:

Given limit:

$$\lim_{x \rightarrow \pi} \left(x - \frac{22}{7} \right)$$

Substituting $x = \pi$, we get

$$\lim_{x \rightarrow \pi} \left(x - \frac{22}{7} \right) = (\pi - 22 / 7)$$

3. Evaluate the Given limit: $\lim_{r \rightarrow 1} \pi r^2$

Solution:

Given limit: $\lim_{r \rightarrow 1} \pi r^2$

Substituting $r = 1$, we get

$$\lim_{r \rightarrow 1} \pi r^2 = \pi(1)^2$$

$$= \pi$$

4. Evaluate the Given limit: $\lim_{x \rightarrow 4} \frac{4x+3}{x-2}$

Solution:

Given limit:

$$\lim_{x \rightarrow 4} \frac{4x+3}{x-2}$$

Substituting $x = 4$, we get

$$\lim_{x \rightarrow 4} \frac{4x+3}{x-2} = [4(4) + 3] / (4 - 2)$$

$$= (16 + 3) / 2$$

$$= 19 / 2$$

5. Evaluate the Given limit: $\lim_{x \rightarrow -1} \frac{x^{10} + x^5 + 1}{x - 1}$

Solution:

Given limit:

$$\lim_{x \rightarrow -1} \frac{x^{10} + x^5 + 1}{x - 1}$$

Substituting $x = -1$, we get

$$\lim_{x \rightarrow -1} \frac{x^{10} + x^5 + 1}{x - 1}$$

$$= [(-1)^{10} + (-1)^5 + 1] / (-1 - 1)$$

$$= (1 - 1 + 1) / -2$$

$$= -1 / 2$$