

1. Let f be a function defined in $\mathbb{R}$ as $f(x) = x^3$.

f is continuous function.....

2. Consider a function $f: \mathbb{R} \rightarrow \mathbb{R}$ defined as

$$f(x) = 2, \text{ if } x < 5$$

$$= 3 \text{ if } x \geq 5.$$

f is a continuous function.....

3. Let f be a function defined in $\mathbb{R}$ as $f(x) = x - 2$.

f is discontinuous at $x = 2$

4. Consider a function $f: \mathbb{R} \rightarrow \mathbb{R}$ defined as

$$f(x) = x - 2, \text{ if } x < 4$$

$$= 2x - 6, \text{ if } x \geq 4$$

f is a continuous function at $x = 4$

5. The following function is discontinuous function.

