

Maxima and Minima 18.1 Q4

$$h(x) = \sin 2x + 5$$

We know that $-1 \le \sin 2x \le 1$.

$$\Rightarrow$$
 -1+5 \leq sin 2x +5 \leq 1+5

$$\Rightarrow 4 \le \sin 2x + 5 \le 6$$

Hence, the maximum and minimum values of h are 6 and 4 respectively.

Maxima and Minima 18.1 Q5

$$f(x) = |\sin 4x + 3|$$

We know that $-1 \le \sin 4x \le 1$.

$$\Rightarrow 2 \le \sin 4x + 3 \le 4$$

$$\Rightarrow 2 \le |\sin 4x + 3| \le 4$$

Hence, the maximum and minimum values of f are 4 and 2 respectively.

Maxima and Minima 18.1 Q6

$$f(x) = 2x^3 + 5 \text{ on } R$$

Here, we observe that the values of f(x) increase when the values of x are increased and f(x) can be made as large as possible,we please.

So, f(x) does not have the maximum value.

Similarly f(x) can be made as small as we please by giving smaller values to x.

So, f(x) does not have the minimum value.

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