

### Practice Exercise For Lecture 13

**Q1.** Determine whether  $\lim_{x \rightarrow 0} \frac{1 - \cos x}{|x|}$  exists or not?

**Q2.** Find the interval on which the given function is continuous:

$$y = \frac{x+3}{x^2 - 3x - 10}$$

(Ans.  $(-\infty, -2) \cup (-2, 5) \cup (5, +\infty)$  )

**Q3.** Find the interval on which the given function is continuous:

$$y = \frac{1}{(x+2)^2} + 4$$

(Ans.  $(-\infty, -2) \cup (-2, +\infty)$  )

**Q4.** Compute  $\lim_{x \rightarrow 0} \frac{\sin 3x}{4x}$ .

(Ans. 3/4)

**Q5.** Compute  $\lim_{\theta \rightarrow 0} \frac{\cos 2\theta + 1}{\cos \theta}$ .

(Ans. 2)

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