Fri, November 6, 2015

p. 564: 5, 7, 11, 12, 13, 14, 16, 19, 21, 23, 25, 29, 39

Problem 5

Problem. Evaluate the limit
$$\lim_{x \to 4} \frac{3(x-4)}{x^2 - 16}$$
(a) using techniques from Chapters 1 and 3 and (b) using L'Hôpital's Rule.

Solution.

Problem 7

Problem. Evaluate the limit
$$\lim_{x \to 6} \frac{\sqrt{x+10} - 4}{x - 6}$$
(a) using techniques from Chapters 1 and 3 and (b) using L'Hôpital's Rule.

Solution.

Problem 11

Problem. Evaluate the limit
$$\lim_{x \to 3} \frac{x^2 - 2x - 3}{x - 3}$$
using L'Hôpital's Rule if necessary.

Solution.

Problem 12

Problem. Evaluate the limit
$$\lim_{x \to -2} \frac{x^2 - 3x - 10}{x + 2}$$
using L'Hôpital's Rule if necessary.

Solution.

Problem 13

Problem. Evaluate the limit
$$\lim_{x \to 0} \frac{\sqrt{25 - x^2} - 5}{x}$$
using L'Hôpital's Rule if necessary.

Solution.

Problem 14

Problem. Evaluate the limit
$$\lim_{x \to 5^-} \frac{\sqrt{25 - x^2}}{x - 5}$$
using L'Hôpital's Rule if necessary.

Solution.

Problem 16

Problem. Evaluate the limit
$$\lim_{x \to 1} \frac{\ln x^3}{x^2 - 1}$$
using L'Hôpital's Rule if necessary.

Solution.

Problem 19

Problem. Evaluate the limit
$$\lim_{x \to 0} \frac{\sin 3x}{\sin 5x}$$
using L'Hôpital's Rule if necessary.

Solution.

Problem 21

Problem. Evaluate the limit
$$\lim_{x \to 0} \frac{\arcsin x}{x}$$
using L'Hôpital's Rule if necessary.

Solution.

Problem 23

Problem. Evaluate the limit
$$\lim_{x\to\infty} \frac{5x^2 + 3x - 1}{4x^2 + 5}$$
using L'Hôpital's Rule if necessary.

Solution.

Problem 25

Problem. Evaluate the limit
$$\lim_{x\to\infty} \frac{x^2 + 4x + 7}{x - 6}$$
using L'Hôpital's Rule if necessary.

Solution.

Problem 29

Problem. Evaluate the limit
$$\lim_{x\to\infty} \frac{x}{\sqrt{x^2 + 1}}$$
using L'Hôpital's Rule if necessary.

Solution.

Problem 39

Problem. Evaluate the limit
$$\lim_{x\to 0} \frac{\arctan x}{\sin x}$$
using L'Hôpital's Rule if necessary.

Solution.