Math101 Term181
Sec 13 Quiz 7

Name	ID	Sr

Instruction: CIRCLE one answer and SHOW all your work to get full mark

Q1) If the tangent line to the curve $y = \frac{x^2+2x+b}{x+1}$ at $x = 0$ is **perpendicular** to the slant asymptote of the curve. Then b=

a) 0

b) 1

c) -2

d) 3

e) 2

f) -3

Q2) $\lim_{x\to\infty} \left(\frac{5x+1}{5x+2}\right)^{3x-2}$ =

a) $e^{-3/5}$

b) e^5

c) $\frac{1}{e}$

d) e^{15}

e) e

Q3) $\lim_{x\to 0} \frac{3\sinh(2x) - 4x^3 - 6x}{2x^3 + 12sinx - 12x} =$

a) 4

b) 5

c) 8

d) 2

e) ∞

Q4) $\lim_{x\to 0} \left(\frac{1}{x(x+1)} - \frac{ln(1+x)}{x^2}\right) =$

a) 4

b) 0

c) 1

d) $-\frac{1}{2}$

e) ∞

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Sec 17 Quiz 7

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Q1) The **slant asymptote at** ∞ of $f(x) = 2e^{-x} - 2x + 3$ is

a) $y = 2x - 3$

b) $y = x$

c) $y = -2x$

d) $y = -2x + 5$

e) $y = -2x + 3$

Q2) $\lim_{x\to\infty} \left(\frac{2x+1}{2x+3}\right)^{x+1} =$

a) e

b) e^4

c) $-e$

d) $\frac{1}{e}$

e) e^2

Q3) $\lim_{x\to 0} \frac{2\cos^{-1}(x)-\pi+2x}{x^3} =$

a) $-\frac{1}{6}$

b) $-\frac{1}{3}$

c) π

d) 2

e) ∞

Q4) $\lim_{x\to 0^+} \sin(2x)\ln(3x) =$

a) -6

b) $-\frac{2}{3}$

c) 0

d) $-\frac{3}{2}$

e) ∞

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Sec 18 Quiz 7

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Q1) The **slant asymptote at** ∞ of $f(x) = 2\tan^{-1}(2-x) + \frac{\pi}{2} + 5x$ is

a) $y = 2x + \frac{\pi}{2}$

b) $y = 5x - \frac{\pi}{2}$

c) $y = 5x + \frac{\pi}{2}$

d) $y = 5x - \pi$

e) $y = 5x + \pi$

Q2) $\lim_{x\to\infty} \left(\frac{3x+1}{3x-4}\right)^{x+1} =$

a) $e^{5/3}$

b) e^{9}

c) e

d) $\frac{1}{e}$

e) e^{2}

Q3) $\lim_{x\to 0} \frac{2\cosh x - 2 - x^2}{6e^x - 6 - 6x - 3x^2 - x^3} =$

a) $\frac{1}{3}$

b) $-\frac{1}{6}$

c) 1

d) 2

e) ∞

Q4) $\lim_{x\to\left(\frac{1}{3}\right)^+} \left(\frac{1}{\ln(3x)} - \frac{1}{3x-1}\right) =$

a) 0

b) $\frac{2}{3}$

c) $\frac{1}{6}$

d) $\frac{1}{2}$

e) ∞

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Sec 21 Quiz 7

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Q1) The **slant asymptote at** ∞ of $f(x) = xe^{2/x}$ is

a) $y = ex$

b) $y = x + 2$

c) $y = x - 2$

d) $y = 2x + 2$

e) $y = 2x - 2$

Q2) $\lim_{x\to\infty} \left(\frac{3x+1}{3x+4}\right)^{x+1} =$

a) e^3

b) e^9

c) $\frac{1}{e}$

d) e

e) e^6

Q3) $\lim_{x\to 0} \frac{\sin(3x)-3x-3x^2}{1-\cos(2x)} =$

a) $-\frac{2}{3}$

b) $\frac{2}{3}$

c) -2

d) $\frac{-3}{2}$

e) ∞

Q4) $\lim_{x\to 0} \left(\frac{1}{ln(x+1)} - \frac{1}{x}\right) =$

a) $-\frac{3}{2}$

b) 0

c) 1

d) $\frac{1}{2}$

e) ∞