

1) $\lim_{x \rightarrow 0} \frac{\sin ax}{bx}$

$= \lim_{x \rightarrow 0} \sin ax \times \frac{1}{bx}$

Multiply and divide by ax

$\lim_{x \rightarrow 0} \frac{\sin ax}{ax} \times \frac{ax}{bx}$

$= \frac{\sin ax}{ax} \times \frac{a}{b}$

$= \frac{a}{b} \times \lim_{x \rightarrow 0} \frac{\sin ax}{ax}$

Using $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$

$x = ax$

$= \frac{a}{b} \times 1 = \frac{a}{b}$

$\therefore \lim_{x \rightarrow 0} \frac{\sin ax}{bx} = a/b$

2) $F(x) = 5x - 21$ as $x \rightarrow 6$ limit = 9

$\delta = 0.1$ and $\Delta \delta = 0.01$

$2 = 4(1-1) - 2(1)$

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L.E	a - 8	a	a + d	L + e
8.5	5.9	6	6.1	9.5
8.55	5.91		6.09	9.45
8.6	5.92		6.08	9.4
8.65	5.93		6.07	9.35
8.7	5.94		6.06	9.3
8.75	5.95		6.05	9.25
8.8	5.96		6.04	9.2
8.85	5.97		6.03	9.15
8.9	5.98		6.02	9.1
8.95	5.99		6.01	9.05
9	6		6	9

$(25 - 2x^2)^{1/2}$ at the intervals $(-5, 5)$ show whether the function

is continuous

$$f(x) = (25 - 2x^2)^{1/2}$$

$$(25 - 2x^2)^{1/2} = \sqrt{25 - 2x^2}$$

from -5 to +5

$$\sqrt{25 - (-5)^2} = 0$$

$$\sqrt{25 - (-4)^2} = 3$$

$$\sqrt{25 - (-3)^2} = 4$$

$$\sqrt{25 - (-2)^2} = 4.58$$

$$\sqrt{25 - (-1)^2} = 4.899$$

$$\sqrt{25 - (0)^2} = 5$$

$$\sqrt{25 - (1)^2} = 4.899$$

$$\sqrt{25 - (2)^2} = 4.58$$

$$\sqrt{25 - (3)^2} = 4$$

$$\sqrt{25 - (4)^2} = 3$$

$$\sqrt{25 - (5)^2} = 0$$

$f(x) = \sqrt{25 - 2x^2}$ is continuous for

all values ranging -5 to 5.