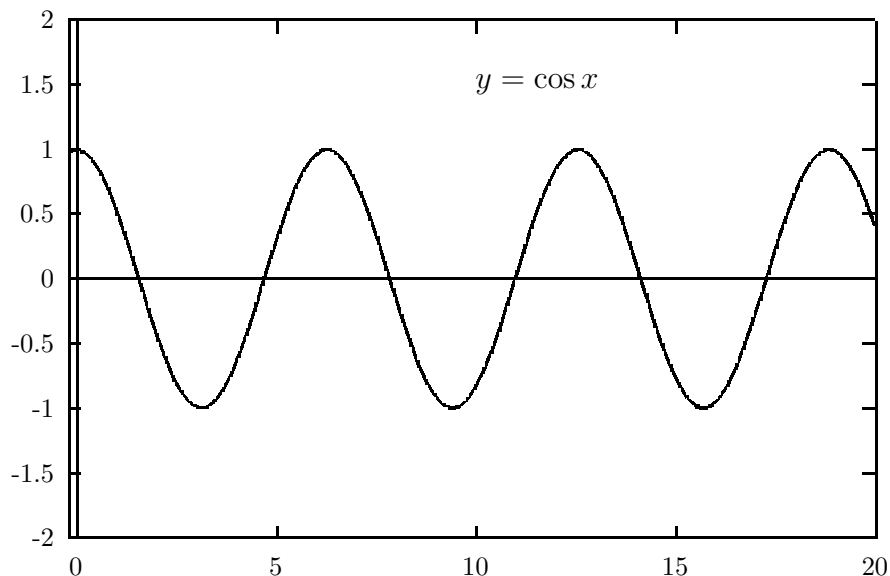


Math 221, Quiz I, September 15, 2000

Answers



I (5 points)

$$\cos(0) = 1$$

$$\cos(\pi) = -1$$

$$\cos(1000\pi) = 1$$

$$\cos(1001\pi) = -1$$

$$\lim_{x \rightarrow \infty} \cos(x) = \text{Does Not Exist}$$

II (5 points) Let $f(x) = x^2$.

a) Find the equation of the line through the points $P(3, f(3))$ and $Q(3.1, f(3.1))$.

$$\frac{y - 9}{x - 3} = \frac{(3.1)^2 - 3^2}{3.1 - 3} = 6.1$$

b) Find the equation of the tangent line to the curve $y = f(x)$ at the point $P(3, f(3))$.

$$\frac{y - 9}{x - 3} = \lim_{h \rightarrow 0} \frac{(3 + h)^2 - 3^2}{(3 + h) - 3} = \lim_{h \rightarrow 0} \frac{6h + h^2}{h} = \lim_{h \rightarrow 0} (6 + h) = 6.$$

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There are 201 scores

range	count	percent
18... 20	70	34.8%
16... 17	25	12.4%
14... 15	23	11.4%
12... 13	31	15.4%
10... 11	19	9.5%
8... 9	14	7.0%
0... 7	19	9.5%

Mean score = 14.1.

/: *	*0	*1	*2	*3	*4	*5	*6	*7	*8	*9
0:	2	0	2	0	6	0	9	0	14	0
10:	19	0	31	0	23	0	24	1	15	5
20:	50									

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