

Rm

Quiz 0

This is a two-stage quiz. During the first stage, use your knowledge & calculator. You have 15 min. In the second stage, you are now welcome to use your books, notes, and students in the class to retake the same quiz. You have the remainder of the quiz time to write one solution (with everyones name on it!!!) to be turned in for the group.

1. [2] What do you want the instructor to know about you?

If this is stage 2 of the quiz, what do you want other students to know about you?
(There could be one thing shared by everyone or separate items.)

I have a lot of demands on my time but I try?

2. [3] What characteristics do you think make a good student. Which do you have?
If this is stage 2, there could be one thing listed by everyone or separate items.

→ openness to others and different content
→ willingness to put in time for a class
→ Curiosity

3. [2] Let a and b be real, non-zero numbers. Add $\frac{1}{a} + \frac{1}{b}$.

$$\frac{1}{a} + \frac{1}{b} = \frac{1}{a} \cdot \frac{b}{b} + \frac{1}{b} \cdot \frac{a}{a} = \frac{1 \cdot b + 1 \cdot a}{ab} = \frac{a+b}{ab}$$

common den (1.5)
legit simplify (1.5)
1.5 ex with same den

4. [3] Find the equation of a line that is tangent to $f(x) = x \sin(x\pi) - 1$ when $x = 1$.
Note that the graph of f is graphed below.
Provide work so that it can be easily followed.



(1.5) { Looking for $y - y_1 = m(x - x_1)$
(1.5) { $m = \text{slope of line tangent to } f \text{ @ } x=1$
 $= f'(1)$
 $f'(x) = x[\sin(x\pi)]' + [x]' \sin(x\pi)$
 $= 1 \cdot \pi \cos(\pi) + \sin(\pi) + 1 \cdot 0$
 $= \pi(-1) = -\pi$

(1.5) { $f'(x) = x[\sin(x\pi)]' + [x]' \sin(x\pi)$
 $= x\pi \cos(x\pi) + \sin(x\pi) + 0$
 $= 1 \cdot \pi \cos(\pi) + \sin(\pi) + 0$
 $= \pi(-1) + 0 + 0 = -\pi$
(product rule)

So $y + 1 = (-\pi)(x - 1)$

(1.5) { Passes thru point $x=1$ and $f(1)$ so $(1, \sin(\pi) - 1) = (1, -1)$