Blake Q's #8

June 16, 2020

All of the questions should be completed with the CAS. Without the CAS it will be extremely difficult!

Question 1

Find the x-int and the y-int of equation (1)
***Hint**: Define the function on your CAS*

$$f(x) = -20x + 2\pi \tag{1}$$

Question 2

Graph equation (2) on Desmos first and then find the x-int and the y-int of equation (2)
***Hint**: Use the same method as part 1 to find the x-int and y-int on your CAS*

$$g(x) = x^4 + x^3 - x^2 - 2 \tag{2}$$

Question 3

Blake's Bakery, the second best bakery in the southern hemisphere has a new competitor, Tyler's Tiles. Blake knows that the time in the year determines how much money he makes. This can be seen by $B(t)$, where t is the number of days after the first day of 2020. Tyler thinks that his income can be modeled by $T(t)$.

When do Tyler and Blake have the same income?
How much more income will Tyler have by day 50?
***Hint**: MAKE SURE YOUR CAS IS IN RAD MODE*

$$B(t) = 4\sin(t) + 5 \tag{3}$$

$$T(t) = 2t - 50 \tag{4}$$

Question 4

When do the three equations below all intersect? ***Hint**: Look at Desmos and see if there is an obvious point*

$$f(x) = \sqrt{x} \tag{5}$$

$$g(x) = 10x - 9 \tag{6}$$

$$k(x) = -\cos(\pi x) \tag{7}$$