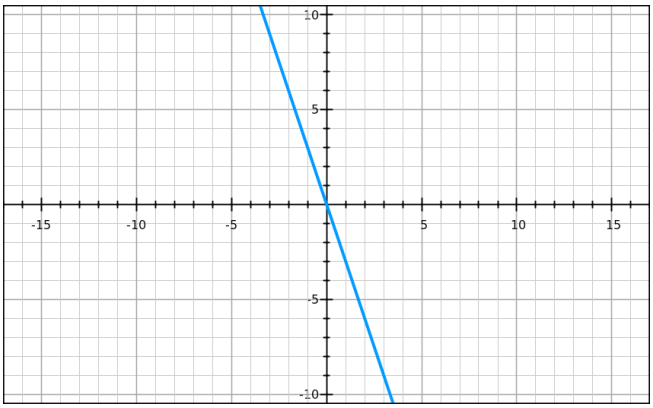
Question 1
For the function f(x) depicted below graph y=f(x-2)



Question 2
The cost, C, (in cents) to produce x ounces of glitter can be expressed as C=f(x). Explain the meaning of f'(55)=-22

Question 3
Find the derivative of the following function. $y = \sqrt[4]{x^6}$

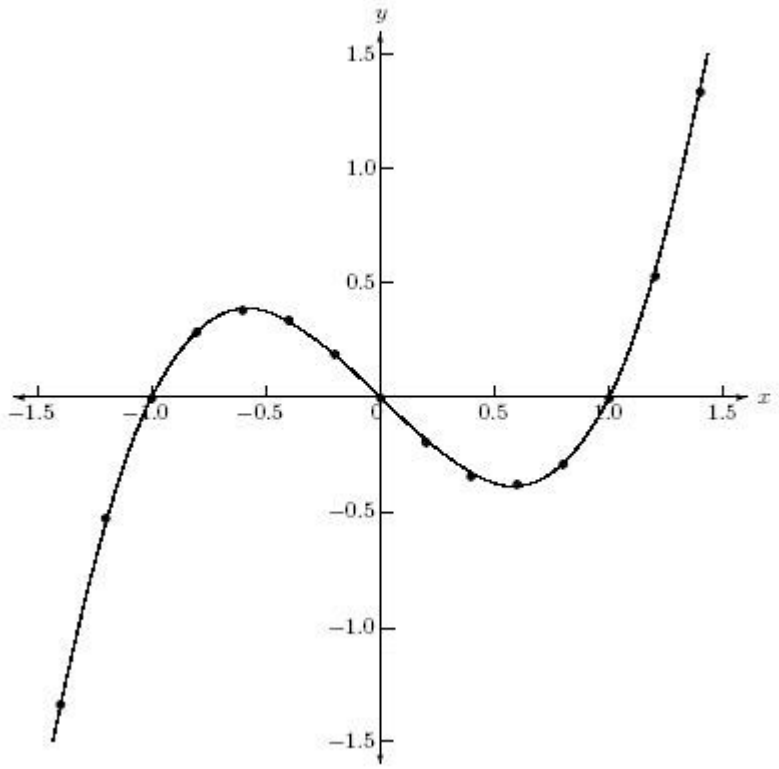
Question 4
Find the derivative of the following function: y = ln(4t^5+3)

Question 5
The cost to produce q items is 1500 + 10q +20q^2 dollars. Find the marginal cost to produce the 15th item.

Question 6
The cost (in dollars) of producing x items is given by C(x)=0.05x^2+22x+5500
a)Find the marginal cost function
C'(x)=

b) Find C(50) and C'(50)
C(50)=
C'(50)=

Question 7



At which point is the derivative largest?

Question 8
Find the derivation of 5x^2+25x-3.

Question 9
Find the derivative of (e^x)(3+x)^1/3

Question 10
The total cost of producing twenty pairs of shoes is $400. The marginal cost of producing the twenty-first pair of boots is $83. We can conclude that the average:
a.
b.
c.
d.

Question 11
Petco has a tank full of 3000 goldfish. The number of goldfish x years later is P(x)= 3000e^(-.4x). Find the average population in the third year.

Question 12
The time to get to class, T, (in minutes) is a function of the amount of students also walking near you on your way to class. If there are S students walking when the time is T=c(s) explain what c'(4000)= 0.04 means?

Question 13
Find the equation of the tangent line to f(x)= lnx at the point where x=3

Question 14
If f(1)=-2.65 and f'(1)=-.005, what is a good estimate for f(2)?

Question 16
Find the equation for a function whose graph is obtained by vertically stretching the graph of y=x^3 by a factor of 6 and then horizontally shifting it to the left by 3 units.

Question 17
If *N* is the average number of species found on an island and *A* is the area of the island, observations have shown that *N* is approximately proportional to the square root of *A*. Write a formula for *N* as a function of *A*.

Question 20
The graph of C (q)= q^2+ 2q+5 has a slope 8 at q=1. At what other point is the slope 8?

Question 21
Find the derivative of the following function: $y=(3x^2+7)^7$

Question 22
Are the following functions power functions? If so give the values of k and p.
1)y=2/x^3
2)y=2^x
3)y=(5x^4)^2

Question 23
The quantity, Q, in tons of material at a landfill is a function of the number of decades years since 2005, with Q=f(t)= 5x^2+400
Find f(10), f'(10), and the relative rate of change f'/f at t=10.

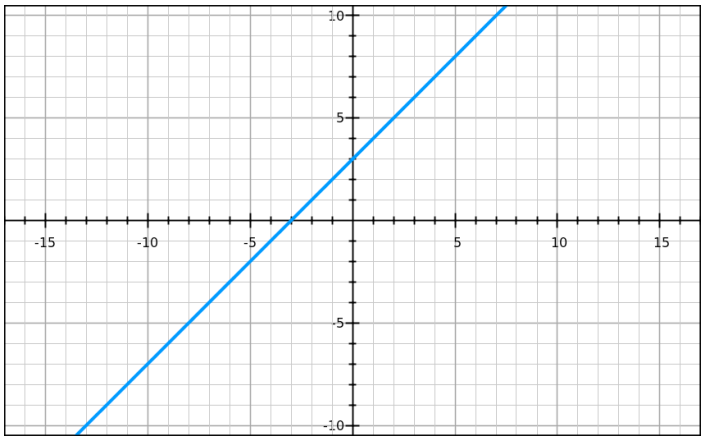
f(10)=
f'(10)=
f'/f=

Question 24
The cost to produce x items is C(x)= 500+5x^2
Find the marginal cost of producing the 15th item. Interpret your answer in terms of costs.

The marginal cost of producing the 15th item is $_____
This means that the cost of production _____ (increases/decreases) by about $_____ when one additional unit is produced.

Question 25

For the function f(x) depicted below, graph y=2f(x)



Question 26

Find the derivative of the following function.

y= (x^3 + 10) ^5