

2018 Spring Math 1325
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Learning Communities Shared Assignment (One is not Seven)

Student name _____ date 06-16-18000

A \$1000 visa credit card at 24% for only 30 years will have a \$20.01 minimum payment per month

$f(X) = \$1000 \text{ Log} (10 - (9/30)X)$ amount owed after X years

$G(X) = 1000(-9/30) / (\text{Ln}(10) (10 - (9/30)(X)))$ instantaneous rate of change

$H(X) = 20.01(12)X$ amount paid in monthly payments

1 find $G(0), G(5), G(10), G(15), G(20), G(25), G(30)$

2 find $f(0), f(1), f(2), f(3), f(4), f(5), f(10), f(15), f(20), f(25), f(30),$

3 find $H(0), H(4), H(30)$

4 find $(f(30) - f(20)) / ((30 - 20)$ average rate of change =

5 graph $f(X)$ and $G(X)$ $X_{\min}=0, X_{\max}=30, Y_{\min}=-200, Y_{\max}=1000$

6 graph $f(X)$ and $H(X)$ $X_{\min}=0, X_{\max}=30, Y_{\min}= -10, Y_{\max}=8000.$

7 find $f(0) - f(4)$

8 if $f(X) = 500$ then find X

9 find $f(0) - H(30)$

10 $R(X) = (100 - 5X)(\$500 + \$50X)$ find the max of grandma's apartments if for every \$50 increase in rent 5 apartments will become empty. graph $X=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10$

$X_{\min}=0, X_{\max}= 12, Y_{\min}=-1, Y_{\max}=60000$

11 $M(X) = \$2000X + \4000 find $M(10)$ tuition at a private university

12 graph $C(X) = \$60000 \text{ Log}(10 - (9/140)X)$ student loan of \$60000 with monthly payments of \$600

$X=0, 12, 24, 36, 48, 60, 72, 84, 96, 108, 120, 132, 140$

$X_{\min} = 0, X_{\max} = 140, Y_{\min} = -10, Y_{\max} = 60000$

Remember credit cards are your friends and one is not seven.

$$\textcircled{1} \quad G(x) = 1000 \left(\frac{-9}{30} \right) / \left(\ln(10) \left(10 - \left(\frac{9}{30} \right) (x) \right) \right)$$

$$G(0) = 1000 \left(\frac{-9}{30} \right) / \left(\ln(10) \left(10 - \left(\frac{9}{30} \right) (0) \right) \right)$$

$$G(0) = -13.02883446$$

$$G(5) = 1000 \left(\frac{-9}{30} \right) / \left(\ln(10) \left(10 - \left(\frac{9}{30} \right) (5) \right) \right)$$

$$G(5) = -15.32804054$$

$$G(10) = 1000 \left(\frac{-9}{30} \right) / \left(\ln(10) \left(10 - \left(\frac{9}{30} \right) (10) \right) \right)$$

$$G(10) = -18.61262085$$

$$G(15) = 1000 \left(\frac{-9}{30} \right) / \left(\ln(10) \left(10 - \left(\frac{9}{30} \right) (15) \right) \right)$$

$$G(15) = -23.68878992$$

$$G(20) = 1000 \left(\frac{-9}{30} \right) / \left(\ln(10) \left(10 - \left(\frac{9}{30} \right) (20) \right) \right)$$

$$G(20) = -32.57208614$$

$$G(x) = 1000 \left(\frac{-9}{30} \right) / \left(\ln(10) \left(10 - \left(\frac{9}{30} \right) x \right) \right)$$

$$G(25) = 1000 \left(\frac{-9}{30} \right) / \left(\ln(10) \left(10 - \left(\frac{9}{30} \right) (25) \right) \right)$$

$$G(25) = -52.11533783$$

$$G(30) = 1000 \left(\frac{-9}{30} \right) / \left(\ln(10) \left(10 - \left(\frac{9}{30} \right) (30) \right) \right)$$

$$G(30) = -130.2883446$$

2

$$f(x) = 1000 \log\left(10 - \left(\frac{9}{30}\right)x\right)$$

$$f(0) = 1000 \log\left(10 - \left(\frac{9}{30}\right)(0)\right)$$

$$f(0) = 1000$$

$$f(1) = 1000 \log\left(10 - \left(\frac{9}{30}\right)(1)\right)$$

$$f(1) = 986.7717343$$

$$f(2) = 1000 \log\left(10 - \left(\frac{9}{30}\right)(2)\right)$$

$$f(2) = 973.1278536$$

$$f(3) = 1000 \log\left(10 - \left(\frac{9}{30}\right)(3)\right)$$

$$f(3) = 959.0413923$$

$$f(x) = 1000 \log\left(10 - \left(\frac{9}{30}\right)x\right)$$

$$f(4) = 1000 \log\left(10 - \left(\frac{9}{30}\right)(4)\right)$$

$$f(4) = 944.4826722$$

$$f(5) = 1000 \log\left(10 - \left(\frac{9}{30}\right)(5)\right)$$

$$f(5) = 929.4189257$$

$$f(10) = 1000 \log\left(10 - \left(\frac{9}{30}\right)(10)\right)$$

$$f(10) = 845.09804$$

$$f(15) = 1000 \log\left(10 - \left(\frac{9}{30}\right)(15)\right)$$

$$f(15) = 740.3626895$$

$$f(x) = 1000 \log\left(10 - \left(\frac{9}{30}\right)x\right)$$

$$f(20) = 1000 \log\left(10 - \left(\frac{9}{30}\right)(20)\right)$$

$$f(20) = 602.0599913$$

$$f(25) = 1000 \log\left(10 - \left(\frac{9}{30}\right)(25)\right)$$

$$f(25) = 397.9400087$$

$$f(30) = 1000 \log\left(10 - \left(\frac{9}{30}\right)(30)\right)$$

$$f(30) = 0$$

3.

$$H(x) = 20.01(12)x$$

$$H(0) = 20.01(12)(0)$$

$$H(0) = 240.12(0)$$

$$H(0) = 0$$

$$H(4) = 20.01(12)(4)$$

$$H(4) = 240.12(4)$$

$$H(4) = 960.48$$

$$H(30) = 20.01(12)(30)$$

$$H(30) = 240.12(30)$$

$$H(30) = 7203.60$$

4.

$$f(x) = 1000 \log\left(10 - \left(\frac{9}{30}\right)x\right)$$

$$\frac{f(30) - f(20)}{(30) - (20)} = \text{average rate of change}$$

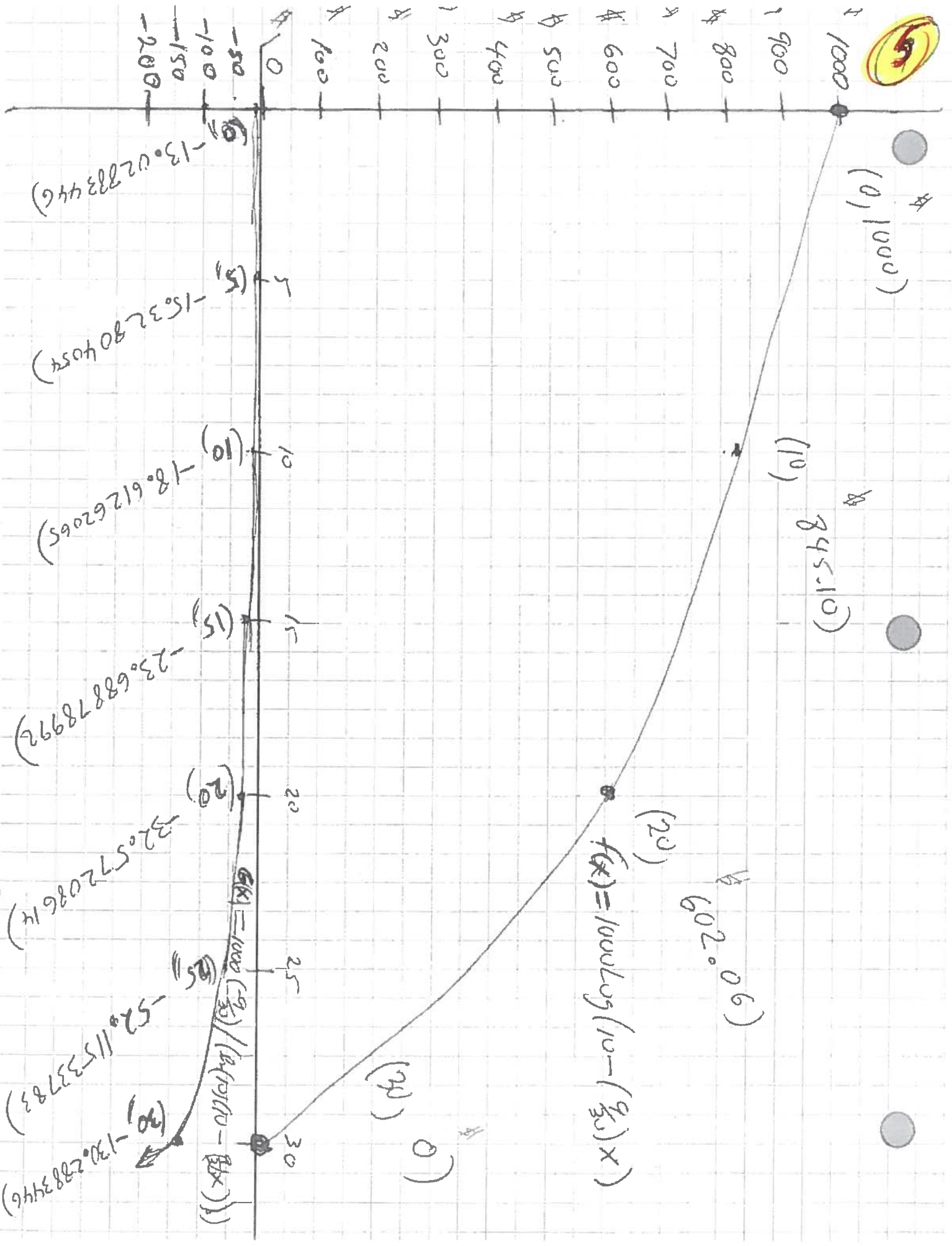
$$\frac{(1000 \log(10 - (\frac{9}{30})(30))) - (1000 \log(10 - (\frac{9}{30})(20)))}{(30) - (20)} =$$

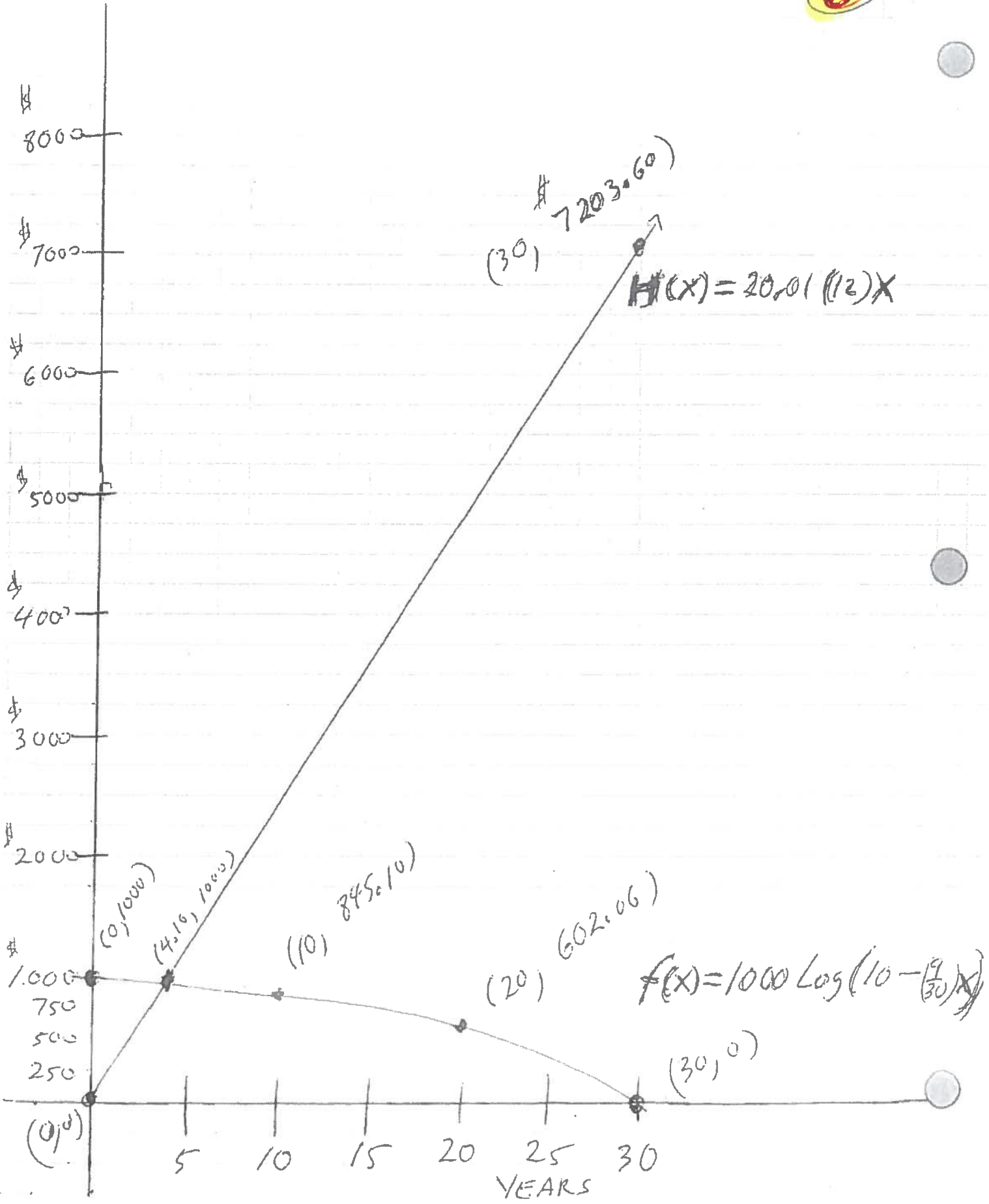
$$\frac{(0.00) - (602.0599913)}{(30) - (20)} =$$

$$\frac{0.00 - 602.0599913}{30 - 20} =$$

$$\frac{-602.0599913}{10} =$$

$$-60.20599913 =$$





7.

$$f(x) = 1000 \log \left(10 - \left(\frac{9}{30} \right) x \right)$$

$$f(8) - f(4) =$$

$$\left(1000 \log \left(10 - \left(\frac{9}{30} \right) (8) \right) \right) - \left(1000 \log \left(10 - \left(\frac{9}{30} \right) (4) \right) \right) =$$

$$(1000) - (944.4826722) =$$

$$1000 - 944.4826722 =$$

$$55.5173278 =$$

8.

$$f(x) = 1000 \log\left(10 - \left(\frac{9}{30}\right)x\right)$$

if $f(x) = 500$ then find x

$$\text{let } 1000 \log\left(10 - \left(\frac{9}{30}\right)x\right) = 500$$

$$\frac{1000 \log\left(10 - \left(\frac{9}{30}\right)x\right)}{1000} = \frac{500}{1000}$$

$$\log\left(10 - \left(\frac{9}{30}\right)x\right) = 0.5$$

$$\log_{10}\left(10 - \left(\frac{9}{30}\right)x\right) = 0.5$$

write base in formula

$$10^{0.5} = \left(10 - \left(\frac{9}{30}\right)x\right)$$

$$10^{0.5} = 10 - \frac{9}{30}x$$

$$10^{0.5} - 10 = \cancel{10} - \frac{9}{30}x - \cancel{10}$$

$$10^{0.5} - 10 = -\frac{9}{30}x$$

$$-\frac{30}{9}\left(10^{0.5} - 10\right) = -\frac{30}{9}\left(-\frac{9}{30}x\right)$$

mult by $-\frac{30}{9}$

$$-\frac{30}{9}\left(10^{0.5} - 10\right) = x$$

$$22.7924078 = x$$

YEARS it takes to owe \$500 on the credit card.

9.

$$f(x) = 1000 \log\left(10 - \left(\frac{9}{30}\right)x\right)$$

$$H(x) = 20.01(12)x$$

$$f(0) - H(30) =$$

$$\left(1000 \log\left(10 - \left(\frac{9}{30}\right)(0)\right)\right) - \left(20.01(12)(30)\right) =$$

$$(1000) - (7203.60) =$$

$$1000 - 7203.60 =$$

$$-6,203.60 =$$

Interest paid on the 1000
Credit Card

10

Find Max use vertex

$$R(x) = (100 - 5x)(500 + 50x)$$

$$R(x) = 50000 + 5000x - 2500x - 250x^2$$

$$R(x) = 50000 + 2500x - 250x^2$$

$$R(x) = -250x^2 + 2500x + 50000$$

$$a = -250, \quad b = 2500, \quad c = 50000$$

To find the max find the vertex

$$\text{Vertex} = \left(\frac{-b}{2a}, R\left(\frac{-b}{2a}\right) \right)$$

$$\text{Vertex} = \left(\frac{-(2500)}{2(-250)}, R\left(\frac{-(2500)}{2(-250)}\right) \right)$$

$$\text{Vertex} = \left(\frac{-2500}{-500}, R\left(\frac{-2500}{-500}\right) \right)$$

$$\text{Vertex} = (5, R(5))$$

$$\text{Vertex} = (5, -250(5)^2 + 2500(5) + 50000)$$

$$\text{Vertex} = (5, -250(5)(5) + 2500(5) + 50000)$$

$$\text{Vertex} = (5, -250(25) + 2500(5) + 50000)$$

$$\text{Vertex} = (5, -6250 + 12500 + 50000)$$

$$\text{Vertex} = (5, 6250 + 50000)$$

$$\text{Vertex} = (5, \overset{\#}{56250})$$

Max

$$R(x) = (100 - 5x)(500 + 50x) \quad \text{original formula}$$

$$R(5) = (100 - 5(5))(500 + 50(5))$$

$$R(5) = (100 - 25)(500 + 250)$$

$$R(5) = (75)(750)$$

$$R(5) = \#56,250$$

Max

75 apartments full at $\frac{\#}{750}$
each will generate the max
profit of $\#56,250$

Find the MAX use Calculus

$$R(x) = (100 - 5x)(500 + 50x)$$

$$R(x) = 50000 + 5000x - 2500x - 250x^2$$

$$R(x) = 50000 + 2500x - 250x^2$$

$$R(x) = -250x^2 + 2500x + 50000$$

$$R'(x) = -250(2x) + 2500(1) + 0$$

$$R'(x) = -500x + 2500$$

$$\text{Let } R'(x) = -500x + 2500 = 0$$

$$-500x + 2500 = 0$$

$$-500x + \cancel{2500} - \cancel{2500} = 0 - 2500$$

$$-500x = -2500$$

$$\frac{-500x}{-500} = \frac{-2500}{-500}$$

$$x = 5$$



$$R'(x) = -500x + 2500$$

$$R'(4) = -500(4) + 2500$$

$$R'(4) = -2000 + 2500$$

$$R'(4) = 500 > 0 \text{ so } R(x) \text{ is increasing}$$

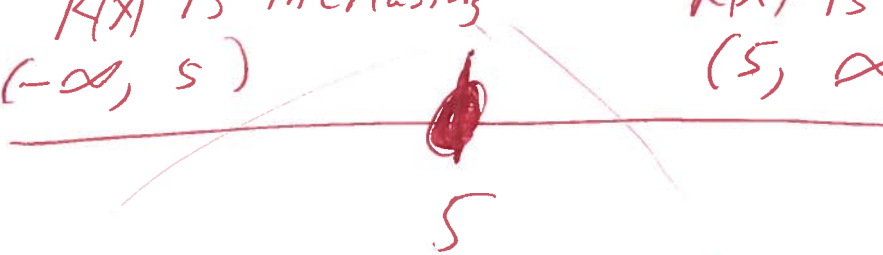
$$R'(6) = -500(6) + 2500$$

$$R'(6) = -3000 + 2500$$

$$R'(6) = -500 < 0 \text{ so } R(x) \text{ is decreasing}$$

$R(x)$ is increasing
 $(-\infty, 5)$

$R(x)$ is decreasing
 $(5, \infty)$



$R(x)$ has a max at $x=5$

$$R(x) = (100 - 5x)(500 + 50x)$$

$$R(5) = (100 - 5(5))(500 + 50(5))$$

$$R(5) = (100 - 25)(500 + 250)$$

$$R(5) = (75)(750)$$

$$R(5) = \$56,250$$

Max per month

$$R(x) = (100 - 5x)(500 + 50x)$$

$$R(0) = (100 - 5(0))(500 + 50(0))$$

$$R(0) = (100 - 0)(500 + 0)$$

$$R(0) = (100)(500)$$

$$R(0) = \$50,000$$

$$R(1) = (100 - 5(1))(500 + 50(1))$$

$$R(1) = (100 - 5)(500 + 50)$$

$$R(1) = (95)(550)$$

$$R(1) = \$52,250$$

$$R(2) = (100 - 5(2))(500 + 50(2))$$

$$R(2) = (100 - 10)(500 + 100)$$

$$R(2) = (90)(600)$$

$$R(2) = \$54,000$$

$$R(x) = (100 - 5x)(500 + 50x)$$

$$R(3) = (100 - 5(3))(500 + 50(3))$$

$$R(3) = (100 - 15)(500 + 150)$$

$$R(3) = (85)(650)$$

$$R(3) = \$55,250$$

$$R(4) = (100 - 5(4))(500 + 50(4))$$

$$R(4) = (100 - 20)(500 + 200)$$

$$R(4) = (80)(700)$$

$$R(4) = \$56,000$$

$$R(5) = (100 - 5(5))(500 + 50(5))$$

$$R(5) = (100 - 25)(500 + 250)$$

$$R(5) = (75)(750)$$

$$R(5) = \$56,250$$

$$R(x) = (100 - 5x)(500 + 50x)$$

$$R(6) = (100 - 5(6))(500 + 50(6))$$

$$R(6) = (100 - 30)(500 + 300)$$

$$R(6) = (70)(800)$$

$$R(6) = \$56,000$$

$$R(7) = (100 - 5(7))(500 + 50(7))$$

$$R(7) = (100 - 35)(500 + 350)$$

$$R(7) = (65)(850)$$

$$R(7) = \$55,250$$

$$R(8) = (100 - 5(8))(500 + 50(8))$$

$$R(8) = (100 - 40)(500 + 400)$$

$$R(8) = (60)(900)$$

$$R(8) = \$54,000$$

$$R(x) = (100 - 5x)(500 + 50x)$$

$$R(9) = (100 - 5(9))(500 + 50(9))$$

$$R(9) = (100 - 45)(500 + 450)$$

$$R(9) = (55)(950)$$

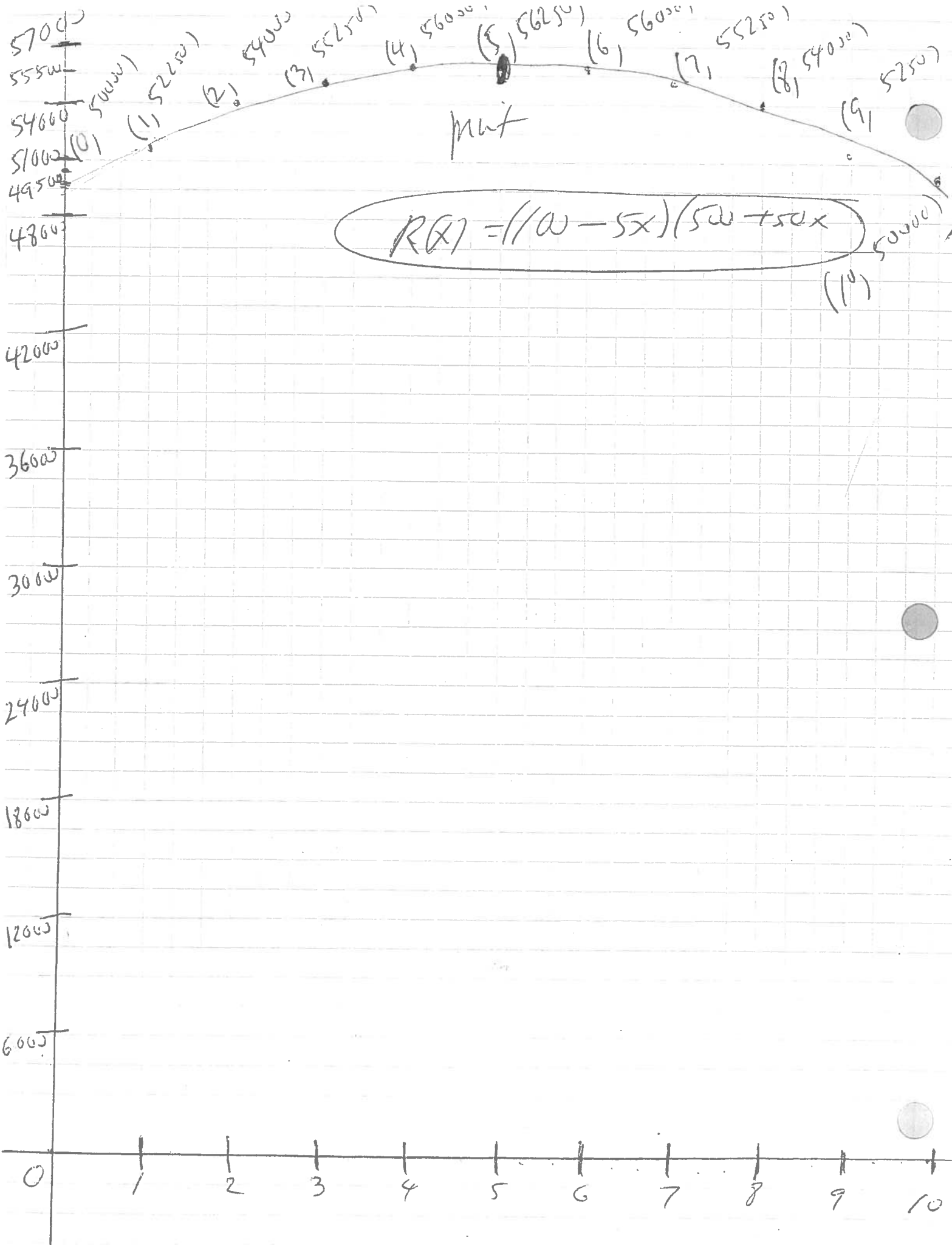
$$R(9) = \$52,250$$

$$R(10) = (100 - 5(10))(500 + 50(10))$$

$$R(10) = (100 - 50)(500 + 500)$$

$$R(10) = (50)(1000)$$

$$R(10) = \$50,000$$





$$M(x) = 2000x + 4000$$

$$M(10) = 2000(10) + 4000$$

$$M(10) = 20000 + 4000$$

$$M(10) = \$24,000$$

Tuition for 10 hours at a
Private University

12.

$$C(x) = 60000 \log\left(10 - \left(\frac{9}{140}\right)x\right)$$

$$C(0) = 60000 \log\left(10 - \left(\frac{9}{140}\right)(0)\right)$$

$$C(0) = \text{\$}60000$$

amount you owe after 0 months

$$C(12) = 60000 \log\left(10 - \left(\frac{9}{140}\right)(12)\right)$$

$$C(12) = \text{\$}57,908.07$$

amount you owe after 12 months

$$C(24) = 60000 \log\left(10 - \left(\frac{9}{140}\right)(24)\right)$$

$$C(24) = \text{\$}55,633.42$$

amount you owe after 24 months

$$C(36) = 60000 \log\left(10 - \left(\frac{9}{140}\right)(36)\right)$$

$$C(36) = \text{\$}53,141.05$$

amount you owe after 36 months

$$C(48) = 60000 \log\left(10 - \left(\frac{9}{140}\right)(48)\right)$$

$$C(48) = \text{\$}50,384.84$$

amount you owe after 48 months

$$C(x) = 60000 \text{Log} \left(10 - \left(\frac{9}{140} \right) x \right)$$

$$C(60) = 60000 \text{Log} \left(10 - \left(\frac{9}{140} \right) (60) \right)$$

$$C(60) = \$47,302.22$$

amount you owe after 60 months

$$C(72) = 60000 \text{Log} \left(10 - \left(\frac{9}{140} \right) (72) \right)$$

$$C(72) = \$43,805.39$$

amount you owe after 72 months

$$C(84) = 60000 \text{Log} \left(10 - \left(\frac{9}{140} \right) (84) \right)$$

$$C(84) = \$39,765.47$$

amount you owe after 84 months

$$C(96) = 60000 \text{Log} \left(10 - \left(\frac{9}{140} \right) (96) \right)$$

$$C(96) = \$34,982.21$$

amount you owe after 96 months

$$C(108) = 60000 \text{Log} \left(10 - \left(\frac{9}{140} \right) (108) \right)$$

$$C(108) = \$29,118.94$$

amount you owe after 108 months

$$C(x) = 60000 \text{Log} \left(10 - \left(\frac{9}{140} \right) x \right)$$

$$C(120) = 60000 \text{Log} \left(10 - \left(\frac{9}{140} \right) (120) \right)$$

$$C(120) = \$21,541.32$$

amount you owe after 120 months

$$C(132) = 60000 \text{Log} \left(10 - \left(\frac{9}{140} \right) (132) \right)$$

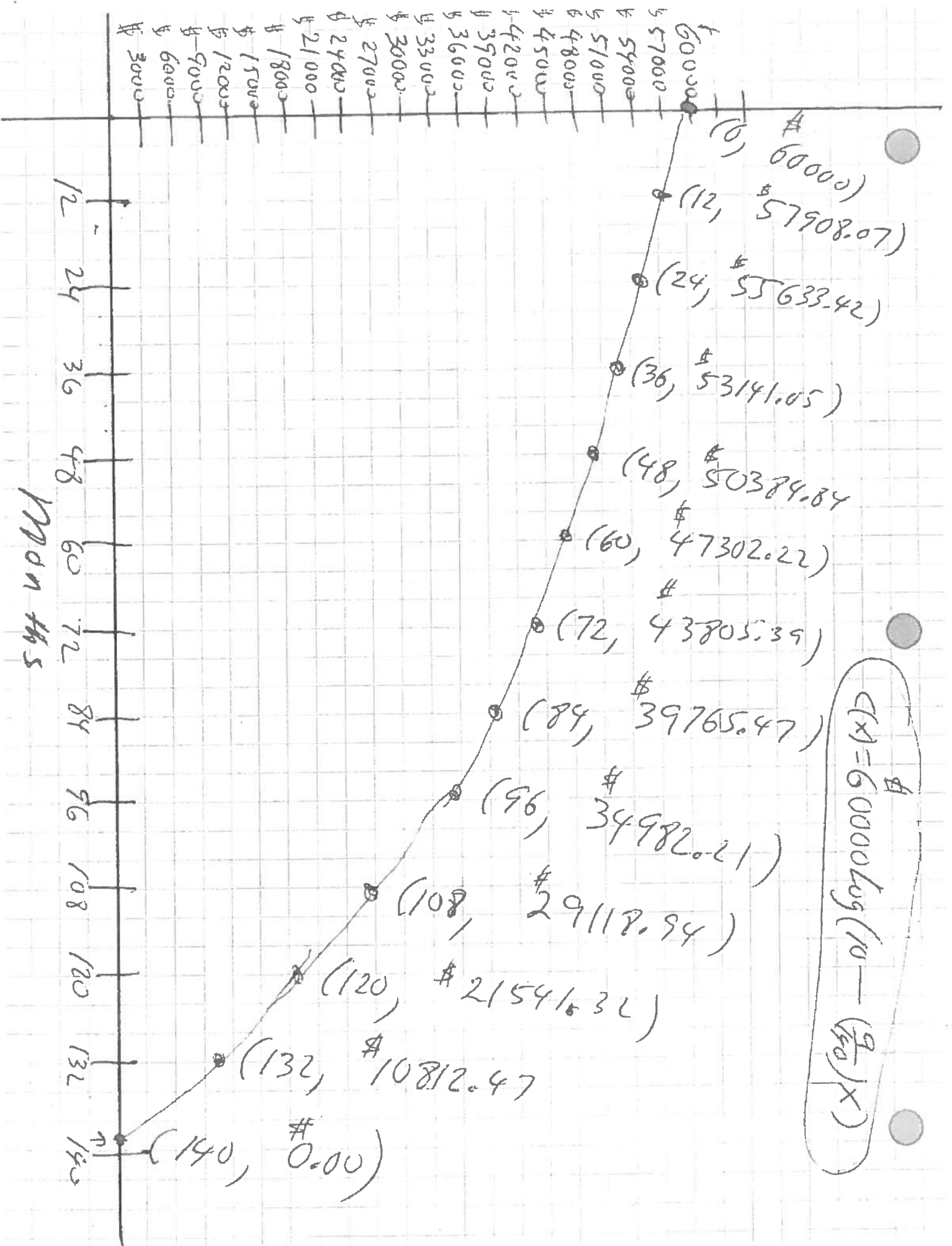
$$C(132) = \$10,812.47$$

amount you owe after 132 months

$$C(140) = 60000 \text{Log} \left(10 - \left(\frac{9}{140} \right) (140) \right)$$

$$C(140) = \$0.00$$

amount you owe after 140 months

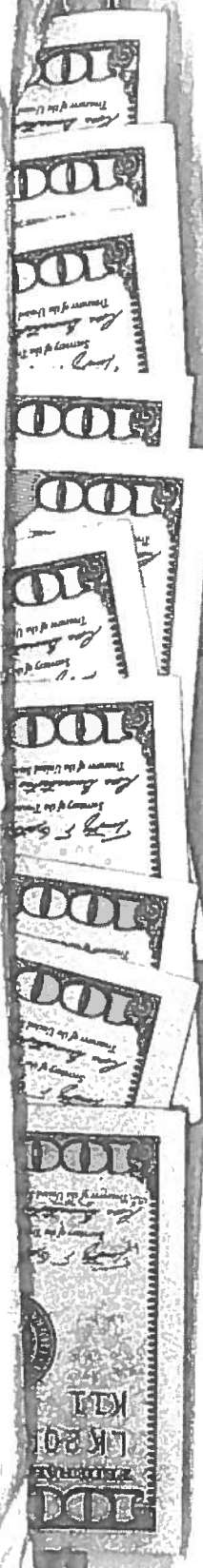


$$C(x) = 60000 \log\left(10 - \left(\frac{9}{10}\right)^x\right)$$



1 + 6 = 7

1000



29519.00



BMW

Ayden



Smart bird says that a \$1000 credit card
at 24% for 30 years with a min payment
of \$20.01 will cost \$7203.06



Bird

5-8-17
Dario

How a credit card works.

\$1000 at 24% for 10 years gives a min payment of \$22.05 per month.

$$A = P(1 + \frac{r}{n}) - M$$

$$P = 1000$$

$$r = 24\% = 0.24$$

$$n = 12 = \text{monthly}$$

$$M = \$22.05 = \text{min payment}$$

$$A = 1000(1 + \frac{0.24}{12}) - (22.05)$$

$$A = 1000(1 + 0.02) - (22.05)$$

$$A = 1000(1.02) - (22.05)$$

$$A = 1020 - 22.05$$

A = \$997.95 Balance after 1st payment

$$A = P(1 + \frac{r}{n}) - M$$

$$P = 997.95$$

$$r = 24\% = 0.24$$

$$n = 12 = \text{monthly}$$

$$M = \$22.05 = \text{min payment}$$

$$A = 997.95(1 + \frac{0.24}{12}) - (22.05)$$

$$A = 997.95(1 + 0.02) - (22.05)$$

$$A = 997.95(1.02) - (22.05)$$

$$A = 1017.909 - 22.05$$

$$A = 995.859$$

A = \$995.86 Balance after 2nd payment



\$1000 at 24% for 10 years

$$P = \frac{P_0 \cdot (I/N \cdot 0.01)}{(1 - (1 + I/N \cdot 0.01)^{-N \cdot T})}$$
 MORTIZATION FORMULA PAYMENT = \$ 22.0481
 MONTHLY AMORTIZATION SCHEDULE FOR A \$1000.0000 LOAN
 AT 24.00% COMPOUNDED 12 TIMES PER YEAR FOR 10.00 YEARS.

PAYMENT	MONTHLY INTEREST	MONTHLY PRINCIPLE	TOTAL BALANCE	PAYMENTS
22.05	20.00	2.05	997.95	NUMBER 1
22.05	19.96	2.09	995.86	NUMBER 2
22.05	19.92	2.13	993.73	NUMBER 3
22.05	19.87	2.17	991.56	NUMBER 4
22.05	19.83	2.22	989.34	NUMBER 5
22.05	19.79	2.26	987.08	NUMBER 6
22.05	19.74	2.31	984.77	NUMBER 7
22.05	19.70	2.35	982.42	NUMBER 8
22.05	19.65	2.40	980.02	NUMBER 9
22.05	19.60	2.45	977.57	NUMBER 10
22.05	19.55	2.50	975.08	NUMBER 11
22.05	19.50	2.55	972.53	NUMBER 12

UM OF INTEREST PAID 237.1079
 UM OF PRINCIPLE PAID 27.4693
 NPAID PRINCIPLE 972.5307
 TOTAL PAID PRINCIPLE AND INTEREST 264.5772
 PRESS 1 RETURN FOR MORE OUTPUT

YEAR 1

Amount of credit card paid.

NPAID PRINCIPLE 972.5307
 TOTAL PAID PRINCIPLE AND INTEREST 264.5772
 PRESS 1 RETURN FOR MORE OUTPUT

MONTHLY AMORTIZATION SCHEDULE FOR A \$1000.0000 LOAN
 AT 24.00% COMPOUNDED 12 TIMES PER YEAR FOR 10.00 YEARS.

PAYMENT	INTEREST	PRINCIPLE	BALANCE	PAYMENTS
22.05	19.45	2.60	969.93	NUMBER 13
22.05	19.40	2.65	967.28	NUMBER 14
22.05	19.35	2.70	964.58	NUMBER 15
22.05	19.29	2.76	961.82	NUMBER 16
22.05	19.24	2.81	959.01	NUMBER 17
22.05	19.18	2.87	956.15	NUMBER 18
22.05	19.12	2.93	953.22	NUMBER 19
22.05	19.06	2.98	950.24	NUMBER 20
22.05	19.00	3.04	947.19	NUMBER 21
22.05	18.94	3.10	944.09	NUMBER 22
22.05	18.88	3.17	940.92	NUMBER 23
22.05	18.82	3.23	937.69	NUMBER 24

YEAR 2

Amount of credit card paid.

UM OF INTEREST PAID 466.8474
 UM OF PRINCIPLE PAID 62.3069
 NPAID PRINCIPLE 937.6931
 TOTAL PAID PRINCIPLE AND INTEREST 529.1543
 PRESS 1 RETURN FOR MORE OUTPUT

UNPAID PRINCIPLE 937.6931
 TOTAL PAID PRINCIPLE AND INTEREST 529.1543
 PRESS 1 RETURN FOR MORE OUTPUT

MONTHLY AMORTIZATION SCHEDULE FOR A \$1000.0000 LOAN
 AT 24.00% COMPOUNDED 12 TIMES PER YEAR FOR 10.00 YEARS.

PAYMENT	INTEREST	PRINCIPLE	BALANCE	PAYMENTS
22.05	18.75	3.29	934.40	NUMBER 25
22.05	18.69	3.36	931.04	NUMBER 26
22.05	18.62	3.43	927.61	NUMBER 27
22.05	18.55	3.50	924.12	NUMBER 28
22.05	18.48	3.57	920.55	NUMBER 29
22.05	18.41	3.64	916.91	NUMBER 30
22.05	18.34	3.71	913.20	NUMBER 31
22.05	18.26	3.78	909.42	NUMBER 32
22.05	18.19	3.86	905.56	NUMBER 33
22.05	18.11	3.94	901.62	NUMBER 34
22.05	18.03	4.02	897.61	NUMBER 35
22.05	17.95	4.10	893.51	NUMBER 36

YEAR 3

Amount of credit card paid.

SUM OF INTEREST PAID 687.2420
 SUM OF PRINCIPLE PAID 106.4895
 UNPAID PRINCIPLE 893.5105
 TOTAL PAID PRINCIPLE AND INTEREST 793.7315
 PRESS 1 RETURN FOR MORE OUTPUT

UNPAID PRINCIPLE 893.5105
 TOTAL PAID PRINCIPLE AND INTEREST 793.7315
 PRESS 1 RETURN FOR MORE OUTPUT

MONTHLY AMORTIZATION SCHEDULE FOR A \$1000.0000 LOAN
 AT 24.00% COMPOUNDED 12 TIMES PER YEAR FOR 10.00 YEARS.

PAYMENT	INTEREST	PRINCIPLE	BALANCE	PAYMENTS
22.05	17.87	4.18	889.33	NUMBER 37
22.05	17.79	4.26	885.07	NUMBER 38
22.05	17.70	4.35	880.72	NUMBER 39
22.05	17.61	4.43	876.29	NUMBER 40
22.05	17.53	4.52	871.77	NUMBER 41
22.05	17.44	4.61	867.16	NUMBER 42
22.05	17.34	4.70	862.45	NUMBER 43
22.05	17.25	4.80	857.65	NUMBER 44
22.05	17.15	4.90	852.76	NUMBER 45
22.05	17.06	4.99	847.76	NUMBER 46
22.05	16.96	5.09	842.67	NUMBER 47
22.05	16.85	5.19	837.48	NUMBER 48

YEAR 4

Amount of credit card paid.

SUM OF INTEREST PAID 895.7850
 SUM OF PRINCIPLE PAID 162.5237
 UNPAID PRINCIPLE 837.4763
 TOTAL PAID PRINCIPLE AND INTEREST 1058.3087
 PRESS 1 RETURN FOR MORE OUTPUT



UNPAID PRINCIPLE 837.4763
 TOTAL PAID PRINCIPLE AND INTEREST 1058.3087
 PRESS 1 RETURN FOR MORE OUTPUT

1
 MONTHLY AMORTIZATION SCHEDULE FOR A \$1000.0000 LOAN
 AT 24.00% COMPOUNDED 12 TIMES PER YEAR FOR 10.00 YEARS.

PAYMENT	INTEREST	PRINCIPLE	BALANCE	PAYMENTS
22.05	16.75	5.30	832.18	NUMBER 49
22.05	16.64	5.40	826.77	NUMBER 50
22.05	16.54	5.51	821.26	NUMBER 51
22.05	16.43	5.62	815.64	NUMBER 52
22.05	16.31	5.74	809.90	NUMBER 53
22.05	16.20	5.85	804.05	NUMBER 54
22.05	16.08	5.97	798.09	NUMBER 55
22.05	15.96	6.09	792.00	NUMBER 56
22.05	15.84	6.21	785.79	NUMBER 57
22.05	15.72	6.33	779.46	NUMBER 58
22.05	15.59	6.46	773.00	NUMBER 59
22.05	15.46	6.59	766.41	NUMBER 60

YEAR
 5

SUM OF INTEREST PAID 1089.2972
 SUM OF PRINCIPLE PAID 233.5886
 UNPAID PRINCIPLE 766.4114
 TOTAL PAID PRINCIPLE AND INTEREST 1322.8858
 PRESS 1 RETURN FOR MORE OUTPUT

UNPAID PRINCIPLE 766.4114
 TOTAL PAID PRINCIPLE AND INTEREST 1322.8858
 PRESS 1 RETURN FOR MORE OUTPUT

1
 MONTHLY AMORTIZATION SCHEDULE FOR A \$1000.0000 LOAN
 AT 24.00% COMPOUNDED 12 TIMES PER YEAR FOR 10.00 YEARS.

PAYMENT	INTEREST	PRINCIPLE	BALANCE	PAYMENTS
22.05	15.33	6.72	759.69	NUMBER 61
22.05	15.19	6.85	752.84	NUMBER 62
22.05	15.06	6.99	745.85	NUMBER 63
22.05	14.92	7.13	738.71	NUMBER 64
22.05	14.77	7.27	731.44	NUMBER 65
22.05	14.63	7.42	724.02	NUMBER 66
22.05	14.48	7.57	716.45	NUMBER 67
22.05	14.33	7.72	708.73	NUMBER 68
22.05	14.17	7.87	700.86	NUMBER 69
22.05	14.02	8.03	692.83	NUMBER 70
22.05	13.86	8.19	684.64	NUMBER 71
22.05	13.69	8.36	676.28	NUMBER 72

YEAR
 6

SUM OF INTEREST PAID 1263.7469
 SUM OF PRINCIPLE PAID 323.7161
 UNPAID PRINCIPLE 676.2839
 TOTAL PAID PRINCIPLE AND INTEREST 1587.4630
 PRESS 1 RETURN FOR MORE OUTPUT

UNPAID PRINCIPLE 676.2839
 TOTAL PAID PRINCIPLE AND INTEREST 1587.4630
 PRESS 1 RETURN FOR MORE OUTPUT

1
 MONTHLY AMORTIZATION SCHEDULE FOR A \$1000.0000 LOAN
 AT 24.00% COMPOUNDED 12 TIMES PER YEAR FOR 10.00 YE.

PAYMENT	INTEREST	PRINCIPLE	BALANCE	PAYMENTS
22.05	13.53	8.52	667.76	NUMBER 73
22.05	13.36	8.69	659.07	NUMBER 74
22.05	13.18	8.87	650.20	NUMBER 75
22.05	13.00	9.04	641.16	NUMBER 76
22.05	12.82	9.22	631.93	NUMBER 77
22.05	12.64	9.41	622.52	NUMBER 78
22.05	12.45	9.60	612.93	NUMBER 79
22.05	12.26	9.79	603.14	NUMBER 80
22.05	12.06	9.99	593.15	NUMBER 81
22.05	11.86	10.19	582.97	NUMBER 82
22.05	11.66	10.39	572.58	NUMBER 83
22.05	11.45	10.60	561.98	NUMBER 84

YEAR
 7

SUM OF INTEREST PAID 1414.0206
 SUM OF PRINCIPLE PAID 438.0195
 UNPAID PRINCIPLE 561.9805
 TOTAL PAID PRINCIPLE AND INTEREST 1852.0401
 PRESS 1 RETURN FOR MORE OUTPUT

UNPAID PRINCIPLE 561.9805
 TOTAL PAID PRINCIPLE AND INTEREST 1852.0401
 PRESS 1 RETURN FOR MORE OUTPUT

1
 MONTHLY AMORTIZATION SCHEDULE FOR A \$1000.0000 LOAN
 AT 24.00% COMPOUNDED 12 TIMES PER YEAR FOR 10.00 YE.

PAYMENT	INTEREST	PRINCIPLE	BALANCE	PAYMENTS
22.05	11.24	10.81	551.17	NUMBER 85
22.05	11.02	11.02	540.15	NUMBER 86
22.05	10.80	11.25	528.90	NUMBER 87
22.05	10.58	11.47	517.43	NUMBER 88
22.05	10.35	11.70	505.73	NUMBER 89
22.05	10.11	11.93	493.80	NUMBER 90
22.05	9.88	12.17	481.63	NUMBER 91
22.05	9.63	12.42	469.21	NUMBER 92
22.05	9.38	12.66	456.55	NUMBER 93
22.05	9.13	12.92	443.63	NUMBER 94
22.05	8.87	13.18	430.46	NUMBER 95
22.05	8.61	13.44	417.02	NUMBER 96

YEAR
 8

SUM OF INTEREST PAID 1533.6334
 SUM OF PRINCIPLE PAID 582.9839
 UNPAID PRINCIPLE 417.0161
 TOTAL PAID PRINCIPLE AND INTEREST 2116.6173
 PRESS 1 RETURN FOR MORE OUTPUT

3

UNPAID PRINCIPLE 417.0161
TOTAL PAID PRINCIPLE AND INTEREST 2116.6173
PRESS 1 RETURN FOR MORE OUTPUT

MONTHLY AMORTIZATION SCHEDULE FOR A \$1000.0000 LOAN
AT 24.00% COMPOUNDED 12 TIMES PER YEAR FOR 10.00 YEARS

PAYMENT	INTEREST	PRINCIPLE	BALANCE	PAYMENTS
22.05	8.34	13.71	403.31	NUMBER 97
22.05	8.07	13.98	389.33	NUMBER 98
22.05	7.79	14.26	375.06	NUMBER 99
22.05	7.50	14.55	360.52	NUMBER 100
22.05	7.21	14.84	345.68	NUMBER 101
22.05	6.91	15.13	330.55	NUMBER 102
22.05	6.61	15.44	315.11	NUMBER 103
22.05	6.30	15.75	299.36	NUMBER 104
22.05	5.99	16.06	283.30	NUMBER 105
22.05	5.67	16.38	266.92	NUMBER 106
22.05	5.34	16.71	250.21	NUMBER 107
22.05	5.00	17.04	233.17	NUMBER 108

YE 10
9

SUM OF INTEREST PAID 1614.3606
SUM OF PRINCIPLE PAID 766.8339
UNPAID PRINCIPLE 233.1661
TOTAL PAID PRINCIPLE AND INTEREST 2381.1945
PRESS 1 RETURN FOR MORE OUTPUT

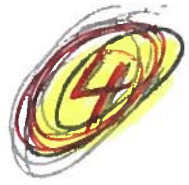
UNPAID PRINCIPLE 233.1661
TOTAL PAID PRINCIPLE AND INTEREST 2381.1945
PRESS 1 RETURN FOR MORE OUTPUT

MONTHLY AMORTIZATION SCHEDULE FOR A \$1000.0000 LOAN
AT 24.00% COMPOUNDED 12 TIMES PER YEAR FOR 10.00 YEARS

PAYMENT	INTEREST	PRINCIPLE	BALANCE	PAYMENTS
22.05	4.66	17.38	215.78	NUMBER 109
22.05	4.32	17.73	198.05	NUMBER 110
22.05	3.96	18.09	179.96	NUMBER 111
22.05	3.60	18.45	161.51	NUMBER 112
22.05	3.23	18.82	142.70	NUMBER 113
22.05	2.85	19.19	123.50	NUMBER 114
22.05	2.47	19.58	103.92	NUMBER 115
22.05	2.08	19.97	83.95	NUMBER 116
22.05	1.68	20.37	63.58	NUMBER 117
22.05	1.27	20.78	42.81	NUMBER 118
22.05	0.86	21.19	21.62	NUMBER 119
22.05	0.43	21.62	0.00	NUMBER 120

YE 10
10

SUM OF INTEREST PAID 1645.7716
SUM OF PRINCIPLE PAID 1000.0000
UNPAID PRINCIPLE 0.0000
TOTAL PAID PRINCIPLE AND INTEREST 2645.7716
PRESS 1 RETURN FOR MORE OUTPUT



The number of years to pay a spring break \$1000 on 24% credit card. 030913

Find the equal monthly payments that will amortize the credit card loan of \$1000 for 10 years at 24%.

Use a graphing calculator

$$A = 1000(.24/12)/((1-(1+.24/12)^{-12(10)})) = 22.04809689$$

TOTAL
\$ 7203.60

Years min monthly payment

30 20.01604414

20.01

$$20.01(12)(30) =$$

29 20.02035223

28 20.02581859

27 20.03275556

26 20.04156023

25 20.05273782

20.05

$$20.05(12)(25) =$$

24 20.06693165

23 20.08496178

22 20.10787501

21 20.13700982

20 20.17408147

20.17

$$20.17(12)(20) =$$

19 20.22129407

18 20.28148986

17 20.35835011

16 20.45666944

15 20.58273647

20.58

$$20.58(12)(15) =$$

14 20.74487245

13 20.95421123

12 21.22505906

\$ 6015.00

\$ 4840.80

\$ 3704.40

11 21.58067409
10 22.04809689
09 22.67084829
08 23.51312748
07 24.67581178
06 26.32683071
05 28.76796583
04 32.60183555
03 39.2328526
02 52.87109725
01 94.55959662

22.05

~~5~~ ~~TOTAL~~
\$ 22.05(12)(10) = \$ 2646.00

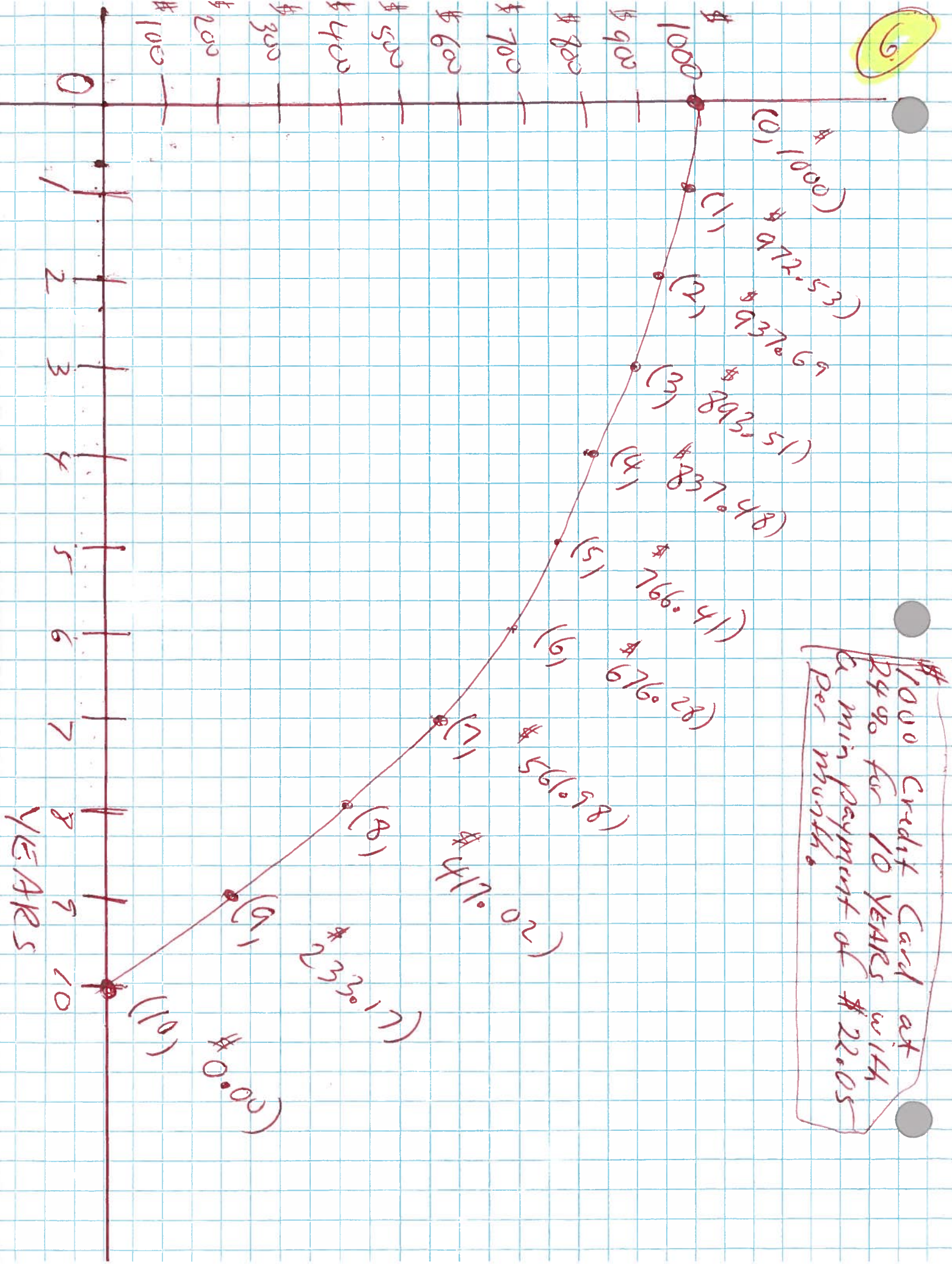
28.77

\$ 28.77(12)(5) = \$ 1726.20

94.56

\$ 94.56(12)(1) = \$ 1134.72

#1000 Credit Card at 24% for 10 YEARS with a min Payment of \$22.05 Per month.



We grow exponentially or really fast.

