

2018 Spring Math 1314
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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

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

- 1 find $f(0), f(1), f(2), f(3), f(4), f(5), f(10), f(15), f(20), f(25), f(30)$
 $g(0), g(4), g(30)$.
- 2 find the domain of $f(X)$
- 3 $f(X) = 500$ then $X =$ years to owe \$500 on the credit card
- 4 find $f(0) - f(4)$ amount you paid on the credit card after 4 years
- 5 find $(f(10) - f(0)) / (10 - 0)$ average rate of change =
- 6 find $(f(20) - f(10)) / (20 - 10)$ average rate of change =
- 7 find $(f(30) - f(20)) / (30 - 20)$ average rate of change =
- 8 graph $f(X)$ $X_{\min} = 0, X_{\max} = 30, Y_{\min} = -10$ and $Y_{\max} = 1000$.
- 9 graph $f(X)$ and $g(X)$ $X_{\min} = 0, X_{\max} = 30, Y_{\min} = -10, Y_{\max} = 8000$.
- 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 the private university
- 12 graph $C(X) = \$60000 \text{ Log}(10 - (9/140)X)$ student loan of \$60000 with \$600 monthly payments
 $X = 0, 12, 24, 36, 48, 60, 72, 84, 96, 108, 120, 132, 140$
 $X_{\min} = 0, X_{\max} = 140, Y_{\min} = -10, Y_{\max} = 60000$

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

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

$$\textcircled{1} f(0) = 1000 \log \left(10 - \left(\frac{9}{30} \right) (0) \right)$$

$$f(0) = 1000 \text{ amount you owe after 0 years}$$

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

$$f(1) = 986.7717343 \text{ amount you owe after 1 year}$$

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

$$f(2) = 973.1278536 \text{ amount you owe after 2 years}$$

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

$$f(3) = 959.0413923$$

amount you owe after 3 years

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

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

$$f(4) = \$ 944.4826722$$

~~amount you owe after 4 years~~

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

$$f(5) = \$ 929.4189257$$

~~amount you owe after 5 years~~

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

$$f(10) = \$ 845.09804$$

~~amount you owe after 10 years~~

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

$$f(15) = \$ 740.3626895$$

~~amount you owe after 15 years~~

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

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

$$f(20) = 602.0599913$$

amount you owe after 20 YEARS

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

$$f(25) = 397.9400087$$

amount you owe after 25 YEARS

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

$$f(30) = 0$$

amount you owe after 30 years



$$g(x) = \$20.01(12)x$$

$$g(0) = \$20.01(12)(0)$$

$$g(0) = 240.12(0)$$

$$g(0) = \$0$$

~~amount paid to credit card after 0 years~~

$$g(4) = \$20.01(12)(4)$$

$$g(4) = 240.12(4)$$

$$g(4) = \$960.48$$

~~amount paid to credit card after 4 years~~

$$g(30) = \$20.01(12)(30)$$

$$g(30) = 240.12(30)$$

$$g(30) = \$7203.60$$

~~amount paid to credit card after 30 YEARS~~

2 find the domain

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

formula (domain)
 $f(x) = \log(Ax+B)$
 set $Ax+B > 0$

set $10 - \frac{9}{30}x > 0$

$10 - \frac{9}{30}x - 10 > 0 - 10$

$-\frac{9}{30}x > -10$

$-\frac{30}{9} \left(-\frac{9x}{30} \right) < -\frac{30}{9} (-10)$

$x < -\frac{30}{9} \left(\frac{-10}{1} \right)$

$x < \frac{300}{9}$

$x < \frac{\$ (100)}{3 (3)}$ factor

$x < \frac{100}{3}$

OR



OR

$(-\infty, \frac{100}{3})$

Mult by $-\frac{30}{9}$
 and turn alligator around

domain

3

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

$f(x) = 500$ find x .

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

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

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

Divide

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

$$\log_{10}\left(10 - \frac{9}{30}x\right) = .5$$

write base in formula

$$10^{.5} = 10 - \frac{9}{30}x$$

rewrite

$$10^{.5} - 10 = 10 - \frac{9}{30}x - 10$$

$$10^{.5} - 10 = -\frac{9}{30}x$$

$$-\frac{30}{9}\left(10^{.5} - 10\right) = -\frac{30}{9}\left(-\frac{9x}{30}\right)$$

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

$$\left(-\frac{30}{9}\right)\left(10^{.5} - 10\right) = x$$

$$22.7924078 = x$$

OR

$$x = 22.7924078$$

YEARS

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

4

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

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

$$\left(1000 \log\left(10 - \left(\frac{9}{30}\right)(0)\right)\right) - \left(1000 \log\left(10 - \left(\frac{9}{30}\right)(4)\right)\right) =$$

$$\left(1000\right) - \left(944.4826722\right) =$$

$$1000 - 944.4826722 =$$

$$55.5173278 =$$

after 4 YEARS you paid

\$ 55.52 on the credit card

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

$$\frac{f(10) - f(0)}{(10) - (0)} = \text{average rate of change}$$

$$\frac{845.09804 - 1000}{10 - 0} =$$

$$\frac{-154.90196}{10} =$$

$$\$ -15.490196 =$$

6 $\frac{f(20) - f(10)}{(20) - (10)} = \text{average rate of change}$

$$\frac{602.0599913 - 845.09804}{20 - 10} =$$

$$\frac{-243.0380487}{10} =$$

$$\$ -24.30380487 =$$

1

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

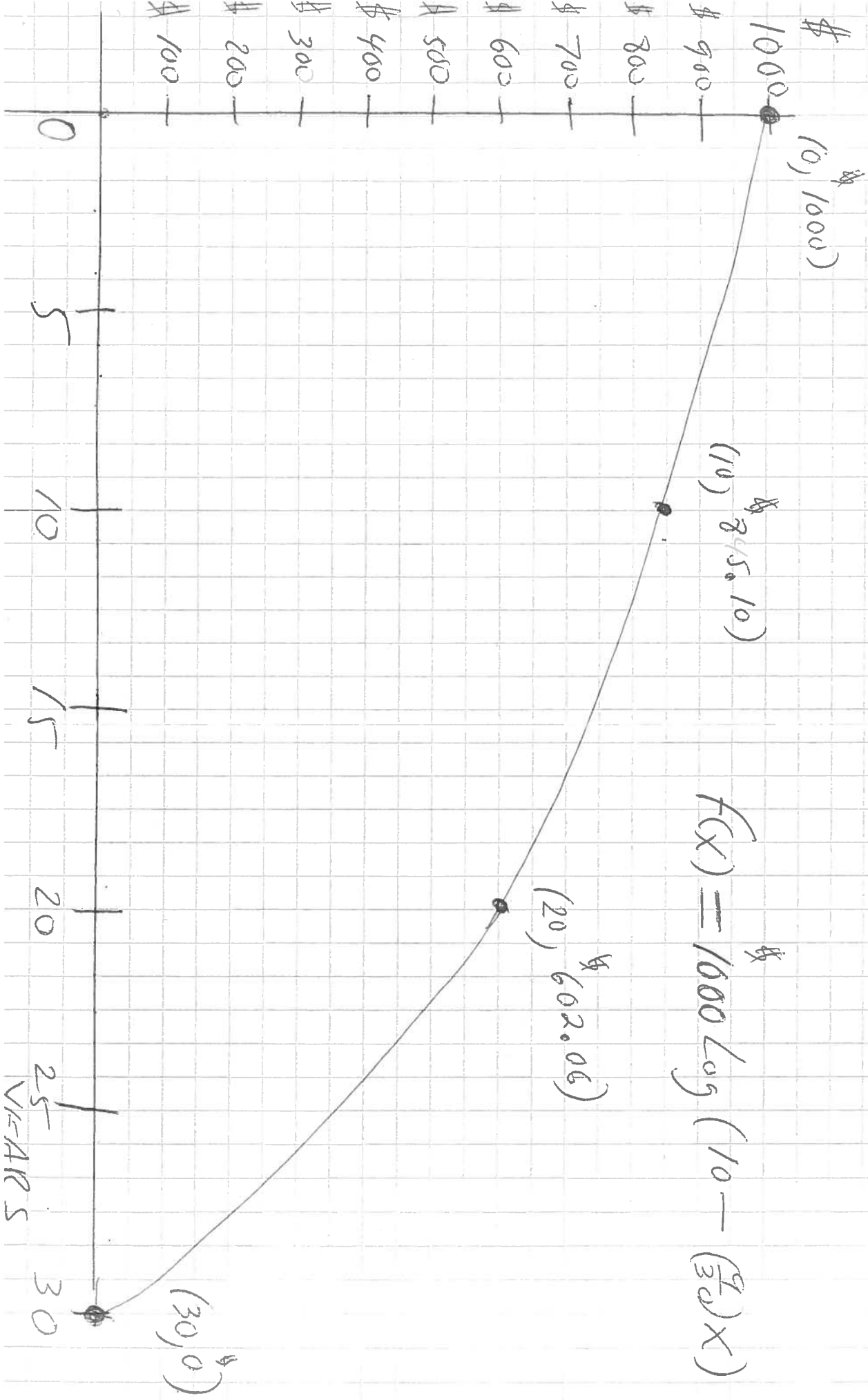
$$\frac{f(30) - f(20)}{(30) - (20)} = \text{average rate of change}$$

$$\frac{0.00 - 602.059913}{30 - 20} =$$

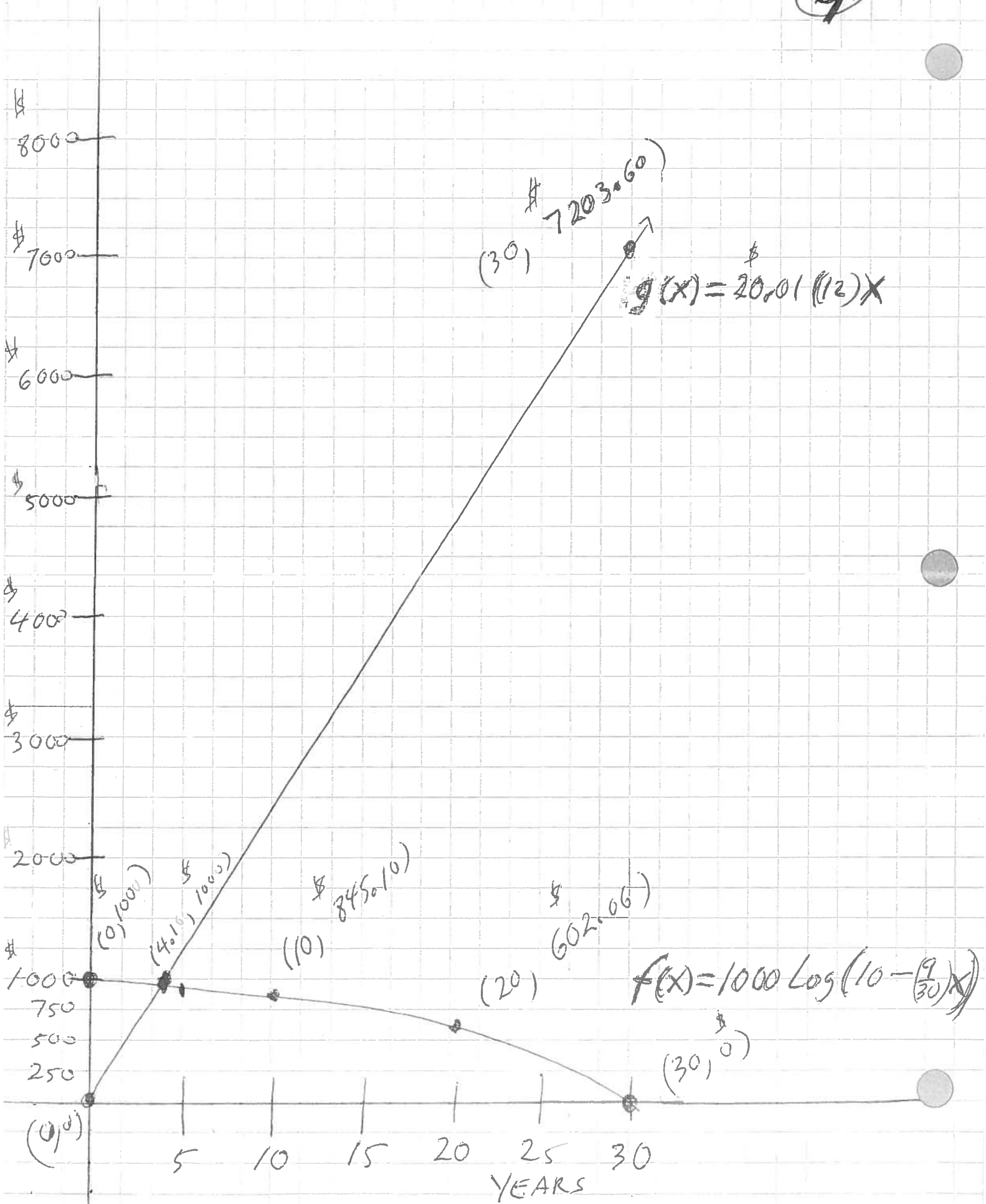
$$\frac{-602.059913}{10} =$$

$$-60.20599913 =$$

8



9.



10.

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

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

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

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

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

To find the max find the Vertex

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

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

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

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

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

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

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

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

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

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

Max

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

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

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

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

$$R(5) = \text{\$} 56,250$$

Max

75 apartments full at $\text{\$} 750$
each will generate the Max
profit of $\text{\$} 56,250$

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

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

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

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

$$R(0) = \$50,000 \text{ per month}$$

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

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

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

$$R(1) = \$52,250 \text{ per month}$$

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

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

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

$$R(2) = \$54,000 \text{ per month}$$

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

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

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

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

$$R(3) = \$55,250 \text{ per month}$$

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

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

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

$$R(4) = \$56,000 \text{ per month}$$

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

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

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

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

per month

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

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

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

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

$$R(6) = \$56,000 \text{ per month}$$

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

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

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

$$R(7) = \$55,250 \text{ per month}$$

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

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

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

$$R(8) = \$54,000 \text{ per month}$$

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

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

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

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

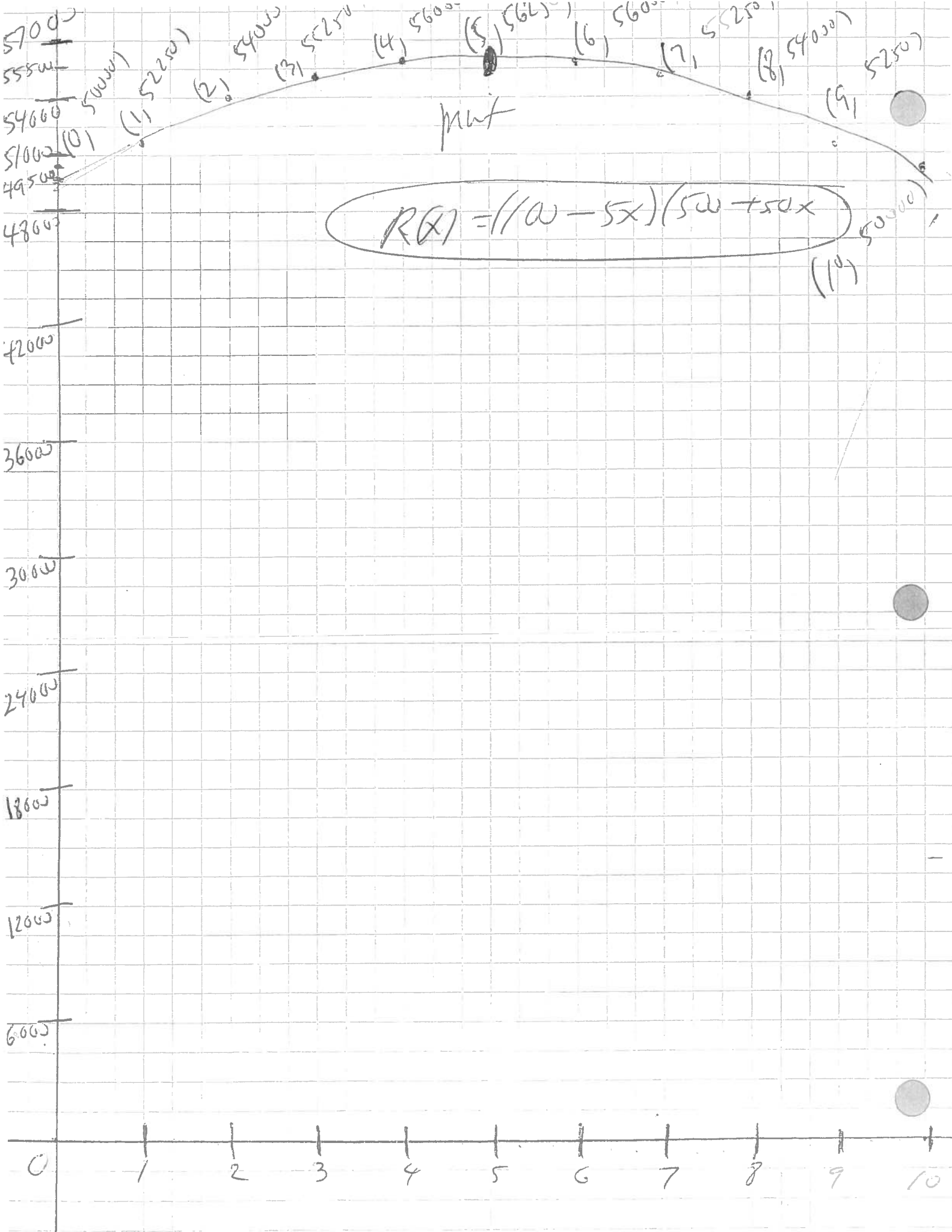
$$R(9) = \$52,250 \text{ per month}$$

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

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

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

$$R(10) = \$50,000 \text{ per month}$$



11.

$$M(x) = 2000x + 4000 \text{ find } M(10)$$

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

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

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

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

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

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

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

amount you owe after 60 months

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

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

amount you owe after 72 months

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

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

amount you owe after 84 months

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

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

amount you owe after 96 months

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

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

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

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

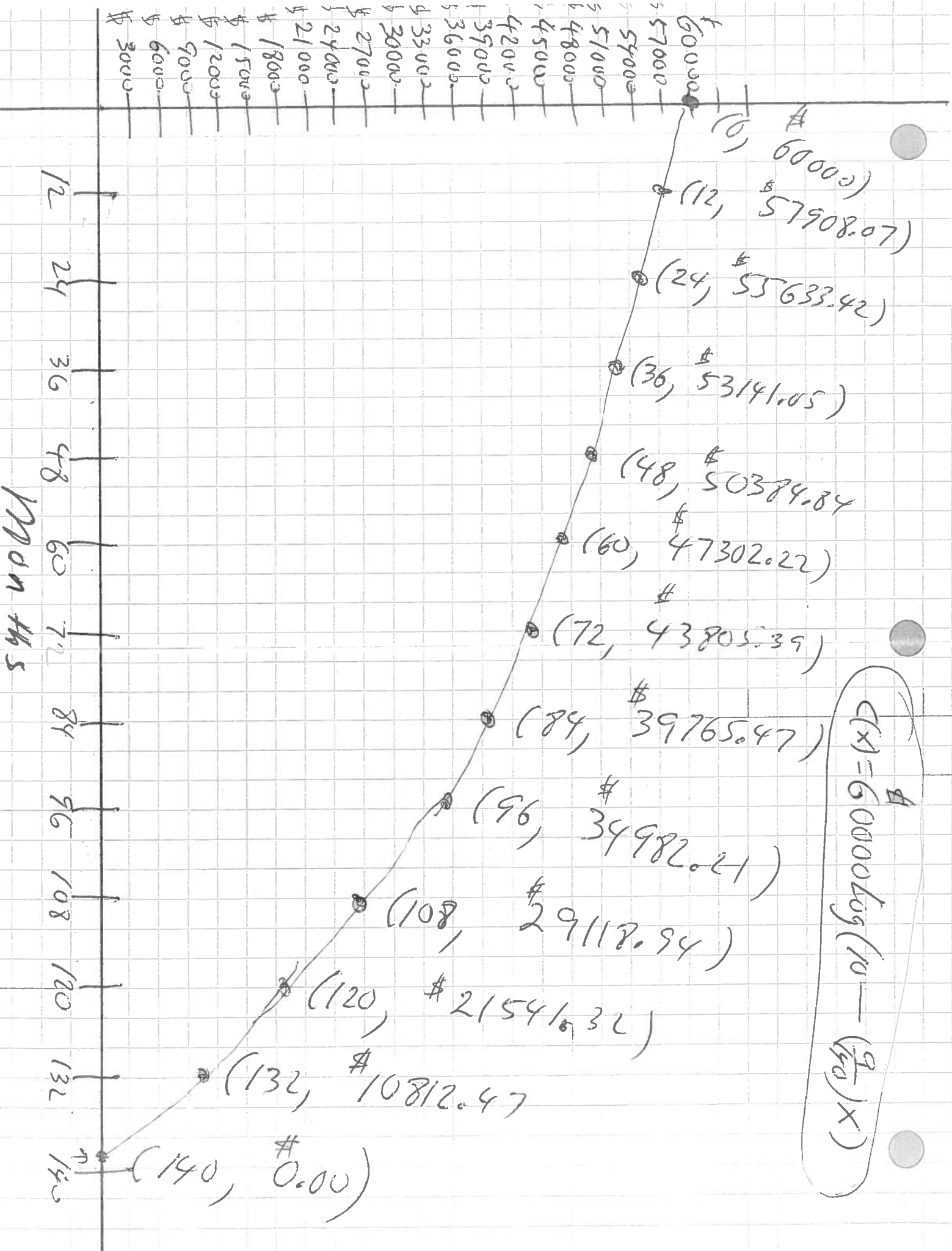
$$C(132) = \$10,812.47$$

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





7
=
9
+
1

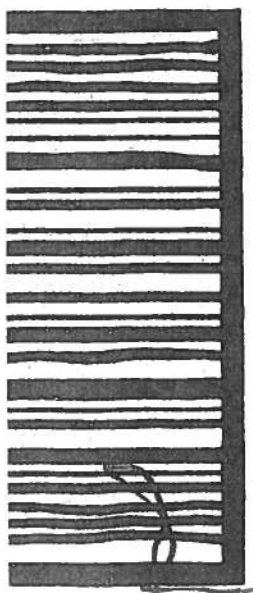
1000



29519.00

BM3M

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
ARW

How a credit card works.

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

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

$$P = 1000$$

$$r = 24\% = 0.24$$

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

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

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

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

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

$$A = 1020 - 22.05$$

A = \$997.95 Balance after 1st payment

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

$$P = 997.95$$

$$r = 24\% = 0.24$$

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

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

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

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

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

$$A = 1017.909 - 22.05$$

$$A = 995.859$$

A = \$995.86 Balance after 2nd payment



#1000 at 24% for 10 years

$$FV = P \cdot \left(\frac{1}{1 + \frac{r}{n}} \right)^{n \cdot t}$$

$$P = \frac{FV}{\left(\frac{1}{1 + \frac{r}{n}} \right)^{n \cdot t}}$$

MORTGIZATION FORMULA PAYMENT = \$ 22.048

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

PAYMENT	INTEREST	PRINCIPLE	TOTAL BALANCE	NUMBER OF 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

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

YEAR 1

Amount of credit card paid.

UNPAID 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	TOTAL 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

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

YEAR 2

Amount of credit card paid.

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	TOTAL 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

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

YEAR 3

Amount of credit card paid.

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	TOTAL 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

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

YEAR 4

Amount of credit card paid.



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	771.00	NUMBER 59
22.05	15.46	6.59	766.41	NUMBER 60
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

YEAR
5

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
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

YEAR
6

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
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

YEAR
7

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
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

YEAR
8

3

UNPAID PRINCIPLE 417.0161
TOTAL PAID PRINCIPLE AND INTEREST 2116.6173
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	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
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

YE 9

UNPAID PRINCIPLE 233.1661
TOTAL PAID PRINCIPLE AND INTEREST 2381.1945
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	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	21.63	NUMBER 119
22.05	0.43	21.62	0.00	NUMBER 120
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

YE 10



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

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

25 20.05273782

20.05

\$ 6015.00

24 20.06693165

23 20.08496178

22 20.10787501

21 20.13700982

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

20 20.17408147

20.17

\$ 4840.80

19 20.22129407

18 20.28148986

17 20.35835011

16 20.45666944

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

15 20.58273647

20.58

\$ 3704.40

14 20.74487245

13 20.95421123

12 21.22505906

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

28.77

94.56

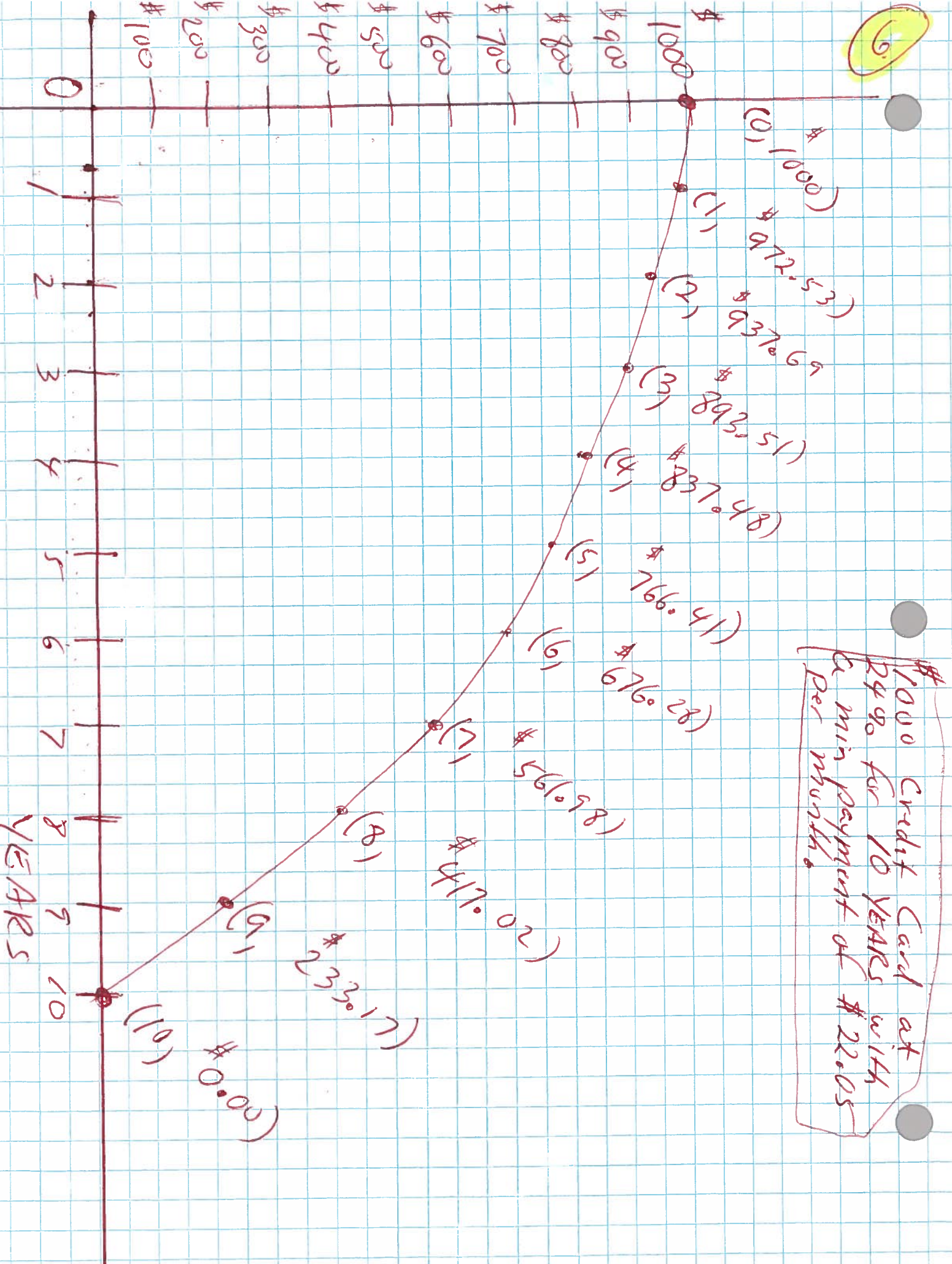
~~5~~ TOTAL

22.05(12)(10) = \$ 2646.00

28.77(12)(5) = \$ 1726.20

94.56(12)(1) = \$ 1134.72

9



\$1000 Credit Card at 24% for 10 YEARS with a min payment of \$22.05 per month.

We grow exponentially or really fast.

