

$$3 \cdot 4^0 + 3 \cdot 4^1 + 3 \cdot 4^2 + \dots + 3 \cdot 4^8$$

$$3 + 12 + 48 + \dots + 196608 \rightarrow 2r^{n-1}$$

① write in Σ -notation

② Find the sum

$$\sum_{k=1}^n ar^{k-1} = \frac{a(1-r^n)}{1-r}$$

$$a=3, r=4$$

$$3 \cdot 4^{n-1} = 196608$$

$$4^{n-1} = 65536$$

$$= 2 + 2r + 2r^2 + \dots + 2r^{n-1}$$

$$4^{n-1} = 2^{16} = 2^{2 \cdot 8} = (2^2)^8 = 4^8$$

$$\sum_{k=1}^9 3 \cdot 4^{k-1}$$

$$n-1=8$$

$$n=9$$

$$\frac{a(1-r^n)}{1-r} = \frac{3(1-4^9)}{1-4}$$

$$= 262,143$$

$$\begin{array}{l} 1 \quad 2 \overline{)196608} \\ 2 \quad 2 \overline{)98304} \\ 3 \quad 2 \overline{)49152} \\ 4 \quad 2 \overline{)24576} \\ 5 \quad 2 \overline{)12288} \\ 6 \quad 2 \overline{)6144} \\ 7 \quad 2 \overline{)3072} \\ 8 \quad 2 \overline{)1536} \\ 9 \quad 2 \overline{)768} \\ 10 \quad 2 \overline{)384} \\ 11 \quad 2 \overline{)192} \\ 12 \quad 2 \overline{)96} \\ 13 \quad 2 \overline{)48} \\ 14 \quad 2 \overline{)24} \\ 15 \quad 2 \overline{)12} \\ 16 \quad 2 \overline{)6} \\ \quad \quad \quad \textcircled{3} \end{array}$$

What are the monthly payments for a loan of \$10000, if the interest rate is 4.64% compounded monthly, and the loan is for 3 years?

J.G. Went worth Equation

Future value of lump sum = Future Value of Annuity

4.64%
4.64
100

$$A = FV$$

$$P(1+i)^n = \frac{R((1+i)^n - 1)}{i}$$

```
((1+.0464/12)^36
-1)/(.0464/12)
38.54624227
10000*(1+.0464/12)^36
11490.4547
```

$$10000 \left(1 + \frac{.0464}{12}\right)^{12 \cdot 3} = \frac{R \left(1 + \frac{.0464}{12}\right)^{36} - 1}{\frac{.0464}{12}}$$

```
-1)/(.0464/12)
38.54624227
10000*(1+.0464/12)^36
11490.4547
Ans/38.54624227
298.0953272
```

$$11490.4547 \approx 38.54624227 R$$

$$\frac{11490.4547}{38.54624227} \approx R \approx 298.0953272$$

Numeracy : Pmt: \$298.10

```
10000*(1+.0464/12)^36
11490.4547
Ans/38.54624227
298.0953272
Ans*36
10731.43178
```

$$(298.0953272)(36) \approx \$10,731.43$$

So about \$731.43 in interest.

\$ 8.5 assignment. Finish by Monday.

~~Tuesday 8-10, wed 9-11 Taken~~

7:45 am - Tuesday	7:45 - 9:35 am
10:45 am - Tuesday	10:45 - 12:35 pm
1:35 pm - Tuesday	1:35 - 3:25 pm
4:25 pm - Tuesday	3:50* - 5:40 pm
7:10 pm - Tuesday	7:10 - 9:00 pm
Wednesday, December 7	
7:10 am - Monday	7:10 - 9:00 am
9:10 am - Monday	9:10 - 11:00 am
11:10 am - Monday	11:10 - 1:00 pm
1:35 pm - Monday	1:35 - 3:25 pm
4:25 pm - Monday	4:25 - 6:15 pm
7:10 pm - Monday	7:10 - 9:00 pm
Thursday, December 8	
9:10 am - Tuesday	9:10 - 11:00 am
12:10 pm - Tuesday	12:10 - 2:00 pm
3:00 pm - Tuesday	3:00 - 4:50 pm
5:45 pm - Tuesday	5:45 - 7:35 pm
8:35 pm - Tuesday	8:00* - 9:50 pm
Friday, December 9	
8:10 am - Monday	8:10 - 10:00 am
10:10 am - Monday	10:10 - 12:00 noon

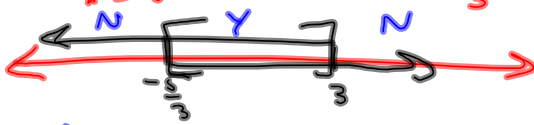
Everything today & Monday is
Final - focused.

$$|3x-2| \leq 7$$

$$3x-2 \leq 7 \text{ AND } 3x-2 \geq -7$$

$$3x \leq 9 \text{ AND } 3x \geq -5$$

$$x \leq 3 \text{ AND } x \geq -\frac{5}{3}$$



$$\left[-\frac{5}{3}, 3\right]$$

$$-2x+5 < 2$$

$$-2x < -3$$

$$\frac{-2x}{-2} > \frac{-3}{-2}$$

$$x > \frac{-3}{-2} = \frac{3}{2}$$

$$x > \frac{3}{2}$$

$$\left(\frac{3}{2}, \infty\right)$$

$$\left\{x \mid x > \frac{3}{2}\right\}$$

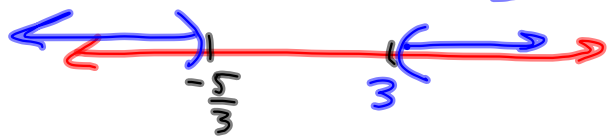
$$= \left\{x \mid x > -5 \text{ OR } x < 7\right\} = (-\infty, \infty)$$

$$|3x-2| > 7$$

$$3x-2 > 7 \text{ OR } 3x-2 < -7$$

$$3x > 9 \text{ OR } 3x < -5$$

$$x > 3 \text{ OR } x < -\frac{5}{3}$$



$$\left(-\infty, -\frac{5}{3}\right) \cup (3, \infty)$$

$$x^2 - 2x - 35 < 0$$

$$(x-7)(x+5) < 0$$

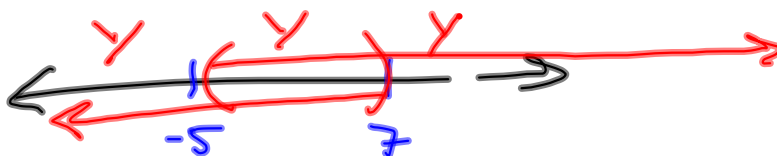
$$\text{TOTAL CRAP: } x-7 < 0 \quad x+5 < 0$$



$$x=8: 8^2 - 2(8) - 35 = 64 - 16 - 35 > 0$$

$$(-5, 7)$$

$$\left\{x \mid x > -5 \text{ AND } x < 7\right\}$$



$$g(x) = 2\sqrt{-3x+9} + 7 = 2\sqrt{-3(x-3)} + 7$$

$$f(x) = \sqrt{x} \quad (1, 1)$$

② $\sqrt{-3x}$ Multiply x's by $-\frac{1}{3}$ $(-\frac{1}{3}, 1)$

③ $\sqrt{-3(x-3)}$ Add 3 to x's $(\frac{8}{3}, 1)$

④ $2\sqrt{-3(x-3)}$ Multiply y's by 2 $(\frac{8}{3}, 2)$

⑤ $2\sqrt{-3(x-3)} + 7$ Add 7 to y's $(\frac{8}{3}, 9)$

