- Please show all of your work.
- Please work in pencil.
- Please circle your answer.

Part One

Directions: Please list the first four numbers in the following series.

5.6, 9.2, 12.8, 16.4

$u_0 = 2$

1. $u_n = u_{n-1} + 3.6$

$U_1 = 2 + 3.6$ $U_2 = 5.6 + 3.6$

$U_1 = 5.6$ $U_2 = 9.2$

$U_3 = 9.2 + 3.6$ $U_4 = 12.8 + 3.6$

12.8 $U_4 = 16.4$

Part Two

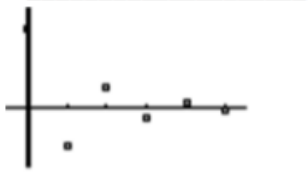
Directions: Please identify if the following routines are arithmetic, geometric or neither.

1. _____

arithmetic

any straight data set is arith.

2. _____



geometric

Part Three

Directions: Consider the following series.

A. Identify the next number in the series.

B. State if there is a common ratio or difference by circling the appropriate word.

C. Compute that ratio or difference.

1. 8, 3.5, -1, -5.5, _____ has a common ratio of _____ has a common difference of _____

2. 6, -18, 54, -162, 486, _____ has a common ratio of _____ has a common difference of _____

Part Four

Directions: Please use your graphing calculator to determine the 48 number in the following series.

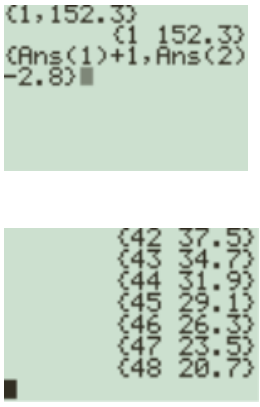
$u_1 = 152.3$

$u_n = u_{n-1} - 2.8$

20.7

start with

then keep hitting enter



Part Five

Directions: Please graph the following.

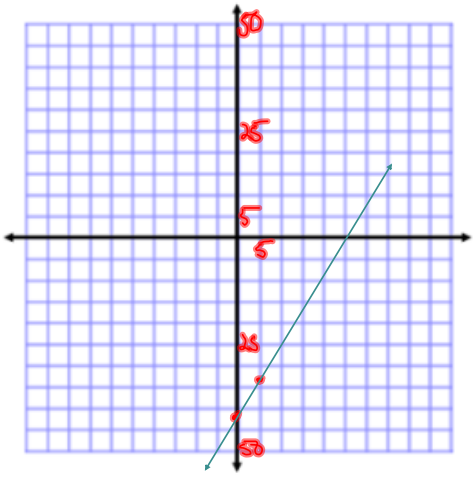
1. $193y-289x=-8106$

$+289x \quad +289x$

$$\frac{193y}{193}=\frac{289x}{193}-\frac{8106}{193}$$

$$y=\frac{289}{193}x-42$$

$\frac{\text{rise}}{\text{run}}=\frac{1.5}{1}$ $\quad y\approx 1.5x-42$ $\quad$ USE scale of 5 to accomodate the 42



Part Six

Directions: Please solve the following linear systems. Find an exact answer. State if there is no solution or infinite solutions.

1.

$$\begin{cases} 3x + 5y = 10 \\ 5(2x - y) = 12 \cdot 5 \end{cases}$$

$3x+5y=10$

$+\ 10x-5y=60$

$13x=70$

$x=\frac{70}{13}$

$3\left(\frac{70}{13}\right)+5y=10$

$\frac{210}{13}+5y=10$

$5y=-\frac{80}{13}$

$y=-\frac{16}{3}$

$\left(\frac{70}{13}, -\frac{16}{13}\right)$

```
70/13→X
          5.384615385
-16/13→Y
         -1.230769231
3X+5Y
                    10
2X-Y
                    12
```

2.

$$\begin{cases} y = 3x + 4 \\ -2y = -6x - 8 \end{cases}$$

$-2(3x+4)=-6x-8$

$-6x-8=-6x-8$

$+4x \qquad +6x$

$-8=-8$ Infinite solutions.

Part Seven

Directions: Please estimate the following solution to the linear system by graphing by hand.

$$\begin{cases} y = 2.3x + 3.2 \\ y = -4.1x - 1.3 \end{cases}$$