

Warm-up: (5 minute reflection & turn in)

*Quietly **reflect** at bottom of assignment sheet

*Done? Turn in up front

	0	1	2
Monday Date: <u>9/11</u> Topic: <u>No Homework</u>			
Tuesday Date: <u>9/12</u> Topic: <u>Gradient Practice</u>			
Wednesday Date: <u>9/13</u> Topic: <u>Equations of a line and Graphing</u>			
Thursday Date: <u>9/14</u> Topic: <u>Equations of a line and Graphing</u>			
Friday Date: <u>9/15</u> Topic: <u>Average Movie Ticket Price Analysis</u>			

Reflection: My week was ... because...
Next week I will...

Class Plan:

1. Warm-up -

Turn in assignment sheet

2. Look over example "Average Movie Ticket Analysis". Reflect on your work.

3. Technology: Linear Regression

TI-83/84

4. Practice - Linear Solving

Mathematician Project - MONDAY :)



U.S. Movie Ticket Analysis

Do: Look over example.

***One packet per table + online.



Extended Level: Movie Ticket Exemplar (9-15)

[Download File](#)

***Reflect on your solving - make any changes.

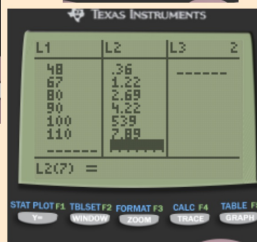
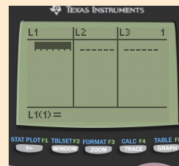


Done?

How can an equation be generated using a graphing calculator?

U.S. Movie Ticket Analysis

1) Enter data! **STAT, EDIT,** then type data.



Year	(after 1948)	Ticket Price (\$)
1948	0	\$0.36
1958	10	\$0.68
1967	19	\$1.22
1974	26	\$1.89
1980	32	\$2.69
1985	37	\$3.55
1990	42	\$4.22
1995	47	\$4.35
2000	52	\$5.39
2005	57	\$6.41
2010	62	\$7.89
2015	67	\$8.43

U.S. Movie Ticket Analysis

2) Calculate and find equation: **STAT, CALC, ENTER, ENTER, ENTER, ENTER, ENTER!**

Year	(after 1948)	Ticket Price (\$)
1948	0	\$0.36
1958	10	\$0.68
1967	19	\$1.22
1974	26	\$1.89
1980	32	\$2.69
1985	37	\$3.55
1990	42	\$4.22
1995	47	\$4.35
2000	52	\$5.39
2005	57	\$6.41
2010	62	\$7.89
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U.S. Movie Ticket Analysis

- *Choose at least 6 pts. *Why these points?*
- *Plot points & label x/y axes
- *Draw Line of Best Fit. *Why this line?*
- *Solve for Gradient. *Interpret meaning*
- *Define x/y & write an equation
- *Does your equation represent your data well?
- *Predict average price in 2025.
- *Is your prediction realistic?



Exercises...Choose 2 levels where you feel confident and challenged :)

Level 1

$$4) -19 = \frac{b}{10}$$

Level 2

$$6) 1 = \frac{k+3}{20}$$

Level 3

$$8) \begin{aligned} f(x) &= 2x - 5 \\ g(x) &= x^2 - 5x \\ \text{Find } f(-9) + g(-9) \end{aligned}$$

Solutions are on back ...
help each other!

Exercises...Choose 2 levels where you feel confident and challenged :)

Level 1

$$1) 15 + b = -1$$

$$2) -2 + k = -9$$

$$3) 21 = -7k$$

$$4) -19 = \frac{b}{10}$$

$$5) -33 = x - 16$$

$$6) 132 = 12x$$

Exercises...Choose 2 levels where you feel confident and challenged :)

Level 1

7) $\frac{-3+n}{4} = 4$

8) $2 = \frac{x}{10} + 4$

9) $16 - 8x + 5x = x - 4$

10) $-15 + 5n - 7n = n + 3$

Exercises...Choose 2 levels where you feel confident and challenged :)

Level 2

Solve each equation.

1) $10 = -9 + n$

2) $-12r = -24$

3) $-6 = \frac{x}{2}$

4) $b - 15 = -22$

5) $-101 = 9r + 7$

6) $1 = \frac{k+3}{20}$

Exercises...Choose 2 levels where you feel confident and challenged :)

Level 2

5) $-101 = 9r + 7$

6) $1 = \frac{k+3}{20}$

7) $-4 + 3x = 1 + 3x$

8) $-3 + 8n - 8 - 3n = 7n - 5$

Solve each proportion.

9) $\frac{x+4}{2} = \frac{7}{4}$

10) $\frac{4}{b+5} = \frac{9}{b}$

Exercises...Choose 2 levels where you feel confident and challenged :)

Level 3

Directions: Solve each equation.

1) $v - 3 = -10 + 2v$

2) $16 - n = n + 4$

3) $90 = 6(7 - 2n)$

4) $-288 = -6(-8 + 8r)$

5) $7(2m + 8) - 6m = -4(m - 8)$

6) $-4(n - 8) - 4n = -3(n - 4) - n$

Exercises...Choose 2 levels where you feel confident and challenged :)

Level 3

7) $f(x) = 3x - 1$
 $g(x) = -2x^2 - 3x$
Find $(f + g)(2)$

8) $f(x) = 2x - 5$
 $g(x) = x^2 - 5x$
Find $f(-9) + g(-9)$

9) If $f(x)$ is a linear function, $f(3) + f(4) = 10$, and $f(5) + f(6) = 18$, then what's $f(7)$?

Level 1 Solutions

- | | | | |
|--------------|--------------|-------------|---------------|
| 1) $\{-16\}$ | 2) $\{-7\}$ | 3) $\{-3\}$ | 4) $\{-190\}$ |
| 5) $\{-17\}$ | 6) $\{11\}$ | 7) $\{19\}$ | 8) $\{-20\}$ |
| 9) $\{5\}$ | 10) $\{-6\}$ | | |

Level 2 Solutions

- | | | | |
|---------------|--------------|-----------------|-------------|
| 1) $\{19\}$ | 2) $\{2\}$ | 3) $\{-12\}$ | 4) $\{-7\}$ |
| 5) $\{-12\}$ | 6) $\{17\}$ | 7) No solution. | 8) $\{-3\}$ |
| 9) $\{-0.5\}$ | 10) $\{-9\}$ | | |

Level 3 Solutions

1) {7}
5) {-2}

2) {6}
6) {5}

3) {-4}
7) -9

4) {7}
8) 103

9) If $f(x)$ is a linear function, $f(3) + f(4) = 10$, and $f(5) + f(6) = 18$, then what's $f(7)$?

$$3m + b + 4m + b = 10$$

$$7m + 2b = 10$$

$$5m + b + 6m + b = 18$$

$$11m + 2b = 18$$

$$f(x) = -2x + 12$$

$$f(7) = -2(7) + 12$$

$$f(7) = -14 + 12$$

$$f(7) = -2$$

Solve System

$$\begin{cases} 7m + 2b = 10 \\ 11m + 2b = 18 \end{cases}$$

$$-4m = 8$$

$$m = -2$$

$$7(-2) + 2b = 10$$

$$-14 + 2b = 10$$

$$2b = 24$$

$$b = 12$$

Using Elimination