

Algebra I
Ch. 7 Quiz Review
7.1-7.3

NAME: _____
DATE: _____ HOUR: _____

You are going into business selling hats that say "I ♥ Algebra." There is a production cost of \$4.50 per hat plus a one-time set-up fee of \$49. You plan on selling the hats for \$8. Let x stand for the number of hats.

- A) Write an equation for the **production cost**. $y =$
- B) Write an equation for the **income**. $y =$
- C) Describe how to find the **profit** you will earn. profit = _____ - _____
- D) Enter your equations into the graphing calculator. "Flash Your Ask" to create a table of values for $x = 0, 5, 10, 15, 20, 30$.
- E) Using the information in your calculator, how much **PROFIT** will you make from selling 5 hats?
Show your work.
- F) Using the information in your calculator, how much **PROFIT** will you make from selling 30 hats?
Show your work.
- G) Set your calculator window to the following bounds.

Variable Quantity	Lower bound	Upper bound	Interval
Hats	0	30	2
Money	0	150	10

Where is the break-even point? (,)

What is your profit at the break-even point? Answer in a complete sentence.

- H) For how many hats is **production cost** GREATER than income? (You lose money.)
Answer in a complete sentence.
- I) For how many hats is **income** GREATER than production cost? (You make money.)
Answer in a complete sentence.

Solve this system of linear equations. Show your work. Check your solution.

$$\begin{cases} y = 3x - 3 \\ y = 2x - 1 \end{cases}$$

check: $\underline{\quad} = 3(\underline{\quad}) - 3$
 $\underline{\quad} = 2(\underline{\quad}) - 1$

solution (,)

Solve these systems using your graphing calculator.

$$\begin{cases} y = 0.4x - 3.8 \\ y = -1.8x + 0.6 \end{cases}$$

(,)

Use this window:

Variable	Lower Bound	Upper Bound	Interval
x	-5	5	1
y	-6	2	1

$$\begin{cases} y = 2.4x + 16.6 \\ y = -6.8x - 20.2 \end{cases}$$

(,)

Use this window:

Variable	Lower Bound	Upper Bound	Interval
x	-10	2	1
y	-1	10	1

Determine whether each linear system is parallel, perpendicular or neither.

1. $\begin{cases} y = 4x + 5 \\ y = -4x + 6 \end{cases}$

2. $\begin{cases} y = -\frac{1}{2}x + 11 \\ y = 2x + 4 \end{cases}$

3. $\begin{cases} y = 7x + 8 \\ y = 7x - 1 \end{cases}$
