

Unit 7 Review Guide

1) Is $(-1, 5)$ a solution to:

$$\begin{aligned} 2x + 5y &= 23 \\ -2x + 3y &= 1 \end{aligned}$$

2) Is $(3, -2)$ a solution to:

$$\begin{aligned} x + 5y &= -7 \\ 2x + 7y &= -8 \end{aligned}$$

3) Solve using any method:

$$\begin{aligned} 5x + 7y &= 10 \\ 3x - 14y &= 6 \end{aligned}$$

4) Solve using any method:

$$\begin{aligned} 2x + 9y &= 16 \\ 5x &= 1 - 3y \end{aligned}$$

5) Solve using any method:

$$\begin{aligned} 2x - 3y &= 16 \\ 3x + 4y &= 7 \end{aligned}$$

6) Solve using any method:

$$\begin{aligned} x + y &= 12 \\ x - y &= 8 \end{aligned}$$

7) Solve using any method:

$$\begin{aligned} 6x - y &= -14 \\ 2x - 3y &= 6 \end{aligned}$$

8) Solve by graphing:

$$\begin{aligned} y &= 2x + 1 \\ -6x + 3y &= 3 \end{aligned}$$

9) Solve by graphing:

$$\begin{aligned} y &= \frac{1}{3}x + 2 \\ y &= \frac{4}{3}x - 3 \end{aligned}$$

10) Solve by graphing

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

$$y \leq 5x + 2$$

11) Solve by graphing

$$y \geq \frac{3}{5}x + 2$$

$$y > \frac{-2}{3}x + 7$$

12) Is $(3, 4)$ a solution to:

$$\begin{aligned} y &< 2x + 4 \\ y &> -3x + 2 \end{aligned}$$

If I was using elimination to solve the following system, what would I do first?

$$\begin{aligned} 2x + 3y &= 3 \\ 5x - 3y &= -12 \end{aligned}$$

14) Zach and Anna ran a total of 23 miles. Anna ran 2 more than twice the number of miles as Zach. How many did they each run?

15) I am planning a party. I bought 5 packages of cups(x) and 3 packages of plates(y) for \$22. I realized I needed more, so I bought 2 more packages of cups and 4 packages of plates for \$20. How much were each?

16) I bought a car and need to pay for it. I can work no more than 12 hours per week at my two jobs. I make \$5 per hour bagging groceries and \$7 per hour answering the phone. I need to earn at least \$75 per week to pay for the car. Find one possible solution to the number of hours I need to work at each job.

17) Which of the following is a solution to:

$$\begin{aligned} y &> -x \\ y &< x \end{aligned}$$

- a. $(-1, 3)$ b. $(-2, 4)$
c. $(-12, -9)$ d. $(6, 3)$

18) You are walking along a path $y = 2x + 12$ and your best friend is walking along $4x + y = 6$. At what point will you cross paths?

19) Write and solve the system. How many children would you need to invite to the party for the cost to be the same for both places?

Place	Cost per child	One time fee for favors
Pizza Place	\$8	\$30
Taco Place	\$12	\$14

20) How many solutions do the following systems have? Explain your answer. This is not a multiple choice problem.

A. $2x + y = 5$

B. $2x + y = 1$

C. $3x + y = -1$

D. $-9x - 3y = 3$

E. $2x + y = 4$

F. $4x - 2y = 0$