

Name: Key Date: 02/07

Unit 2 Review Guide

Identify the property of equality or equation that justifies or completes the missing step.

1. Fill in the missing steps.

Equation	Steps
$4(x - 5) = 28$	Given
$4x - 20 = 28$	Distributive Property of Equality
$4x = 48$	addition prop. of Equality
$x = 12$	Division Property of Equality

2. Solve and explain each step.

Equation	Steps
$-90 = \frac{5x}{12} + 5$	Given
$-95 = \frac{5x}{12}$	Subtraction Prop. of Equality
$-1140 = 5x$	Multiplication Prop. of Eq.
$228 = x$	Division Prop. of Eq.

Solve each system of linear equations by the given method. (2 points for the work/2 points for the answer)

(-1, -3) 3. Solve by **Substitution**:
 $3x + 3y = -12$
 $x = y + 2$

$$3(y + 2) + 3y = -12$$

$$3y + 6 + 3y = -12$$

$$6y + 6 = -12$$

$$6y = -18$$

$$y = -3$$

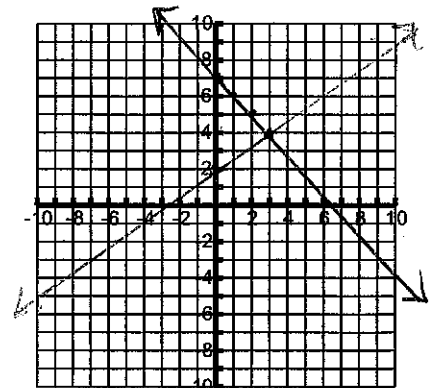
$x = y + 2$
 $x = -3 + 2$
 $x = -1$

(-7, 4) 4. Solve by **Elimination**:
 $2 \cdot (3x + 6y) = (3) \cdot 2$
 $3 \cdot (-2x - 2y) = (6) \cdot 3$

$$\begin{array}{r} 6x + 12y = 6 \\ + -6x - 6y = 18 \\ \hline 0 + 6y = 24 \\ y = 4 \end{array}$$

$3x + 6y = 3$
 $3x + 6(4) = 3$
 $3x + 24 = 3$
 $3x = -21$
 $x = -7$

(3, 4) 5. Solve by **Graphing**:
 $y = -x + 7$
 $y = \frac{2}{3}x + 2$

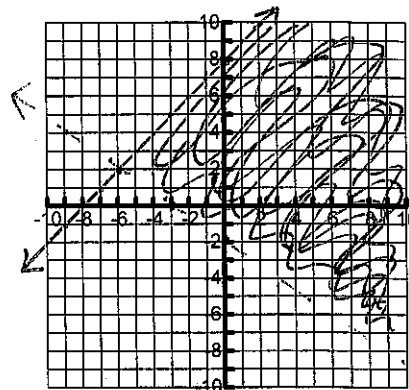


(010) 6. Solve by graphing:

$$y \leq x + 8$$

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

Solutions



Multiple Choice: Choose the best answer for each question.

D 7. The ordered pair (-7, -3) is a solution of which linear system?

A. $2x + 3y = -23$
 $x + 2y = 11$

B. $x + 6y = -11$
 $-7x + 4y = 37$

C. $3x - y = -4$
 $-3x + y = -18$

D $-2x + 7y = -7$
 $x - 5y = 8$

$-2(-7) + 7(-3) = -7 \checkmark$
 $14 - 21 = -7$
 ~~$-7 - 5(-3) = 8$~~
 ~~$-7 + 15 = 8 \checkmark$~~

8. Consider the four systems below. Match the systems to their solutions: Infinite Solutions, No solution, and one solution (4, -5) or (-2, -1). You can use your Calculator to solve this equation.
 ☺ Draw a line connecting the system to its solution.

$x + y = -3$ $y = x + 1$	—————	No Solution
$-x + y = -5$ $y = x + 4$	—————	(4, -5)
$y = -5$ $x = 4$	—————	(-2, -1)
$x + y = 5$ $2x + 2y = 10$	—————	Infinite Solutions

C 9. You are taking a test worth 135 points. There are a total of 45 questions. There are five-point questions and two-point questions. How many two-point questions are on the test?

A. 25

B. 15

C 30

D. 20

$x = \#$ of 5-pt questions
 $y = \#$ of 2-pt questions

$$5x + 2y = 135$$

$$x + y = 45$$

(15, 30)
 There are 30 2-pt questions.

B 10. Which property is illustrated to here: $(2+7)+6=2+(7+6)$

- A. Commutative Property
 B. Associate Property
 C. Multiplicative Identity
 D. Additive Inverse

regrouping the numbers = associativity

Free Response Questions.

You must write your system and sentence-answers.

1. A package of hot dogs cost \$2 and a package of hamburger cost \$8. You bought a total of 13 packages of meat and you spent \$74. How many packages of hamburger meat did you buy? $x =$ packages of hotdogs, $y =$ packages of hamburger

$$\begin{aligned} x + y &= 13 \\ 2x + 8y &= 74 \end{aligned}$$

$(5, 8)$

I bought 8 packages of hamburger.

2. Brooke has an iPhone and notices that it costs 99 cents for apps and \$1.29 for songs.

- A. If Brooke downloads both apps and songs, write an equation for the cost, C , of downloading, a , apps and, s , songs

$$0.99a + 1.29s = C$$

- B. If Brooke downloads 14 songs but only has \$27, can she buy 10 apps? Explain your answer.

$$0.99a + 1.29(14) \leq 27 \quad a \leq 9.03$$

$$\begin{aligned} 0.99a + 18.06 &\leq 27 \\ 0.99a &\leq 8.94 \end{aligned}$$

She can only afford 9 apps after spending \$18.06 on songs

3. You have 168 ride tickets. You need 4 tickets to ride the Ferris Wheel and 8 tickets to ride the roller coaster. You ride both rides a total of 26 times. How many times did you ride the roller coaster? $x =$ # of FW rides, $y =$ # of RC rides

$$\begin{aligned} x + y &= 26 \\ 4x + 8y &= 168 \end{aligned}$$

$(10, 16)$

I rode the roller coaster 16 times.

4. In art class, you are assigned a project. You need to submit 12 drawings. The drawings need to consist of both people and animals. Each drawing of a person is worth 10 points and each drawing of an animal is worth 6 points. You need to get a total of 100 points.

How many drawings of animals do you need? $x =$ # of person drawings, $y =$ # of animal drawings

$$\begin{aligned} x + y &= 12 \\ 10x + 6y &= 100 \end{aligned}$$

$(7, 5)$

I need 5 drawings of animals.

5. Davon and his friends are getting together this weekend to watch the Football game. He is in charge of picking up everyone's dinner. He gave them a choice of a Subway Combo for \$6 or a Chick-fil-a Meal for \$7. He only has \$50. Write an **inequality** that represents this situation.

$$6S + 7C \leq 50$$

, where $S =$ # of Subway Combos
 $C =$ # of Chik-fil-a Meals.

