Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_\_\_\_\_

Study Guide for Unit 2, Unit 3 and Unit 4

Unit 2 (Chapter 3) Solving Equations

1. Solve for $x$. Check your solution.

|  |  |  |
| --- | --- | --- |
| 1. $\left|5-x\right|=9$
 | 1. $6\left(x+2\right)=3\left(5x+1\right)$
 | 1. $\left|2x+3\right|=-7$
 |
| 1. $\left(x-1\right)\left(x+7\right)=\left(x+1\right)\left(x-3\right)$
 | 1. $\left|4x+1\right|=10$
 | 1. $2x-5\left(x+4\right)=-2\left(x+3\right)$
 |
| 1. $4x-2\left(6-x\right)=6$
 | 1. $x\left(2x-4\right)=\left(2x+1\right)\left(x+5\right)$
 | 1. $\left|2x-3\right|=7$
 |

Unit 3 (Chapter 4) Linear Systems

1. Explain what the solution to a system of equations is.
2. What are the 4methods we used to solve linear systems?
3. Practice using each method by deciding which method is best used for these problems.

|  |  |
| --- | --- |
| 1. $ 4x+y=2$

$$-3x-y=-1$$ | 1. $2x-4y=10$

$$x=2y+7$$ |
| 1. $y=-2x+9$

$$y=\frac{1}{2}x+4$$ | 1. $x=y+3$

$$x=3y+5$$ |

1. I want to get gym membership but I am not sure which one to get. There are 2 gyms close to our house. Planet Fitness and Anytime Fitness. Planet Fitness is doing a Memorial Day sale of $10 a month and $100 initial payment which they will donate to a charity of your choice. Anytime Fitness is not running a sale right now. Their plan is $60 a month but with no initial fee. When will these memberships be the same price?
2. Write the two equations that represent the total cost for a gym membership at Planet Fitness and at Anytime Fitness. Write let statements to define what $x$ and$ y$ stand for.

|  |  |
| --- | --- |
| Let $x =$ | Let $y =$ |
| Planet Fitness: | Anytime Fitness: |

1. Solve using the graphing method and one algebraic method. Did you get the same answer? At how many months? What is the cost?



1. If I only want to go to the gym for the first 4 months, which gym membership should I get? Why?

Unit 4 (Chapter 9 section 2) Linear Inequalities

1. When graphing inequalities in one-variable, when do you use an open circle?
2. When graphing inequalities in one-variable, when do you use an close circle?
3. When do you flip the inequality symbol?
4. When graphing inequalities in two-variables, when do you use a dashed line?
5. When graphing inequalities in two-variables, when do you used a solid line?
6. How do you know which side to shade?
7. Solve the inequalities. Then graph the solution set on the number line.

|  |  |
| --- | --- |
| 1. $3x+2\leq 8x-8$

http://i.ehow.com/images/a04/so/7c/make-number-line-math-1.3-800X800.jpg | 1. $2-3\left(x-1\right)\geq x-7$

http://i.ehow.com/images/a04/so/7c/make-number-line-math-1.3-800X800.jpg |
| 1. $\frac{2}{3}p-2>-4$

http://i.ehow.com/images/a04/so/7c/make-number-line-math-1.3-800X800.jpg | 1. $x-7<-2$

http://i.ehow.com/images/a04/so/7c/make-number-line-math-1.3-800X800.jpg |

1. Solve the system of inequalities by graphing.

|  |  |
| --- | --- |
| 1.
 | 1.
 |

1. Camille is selling bracelets and earrings to make money for her summer vacation plans. The bracelets cost $2 and the earrings cost $3. She needs to make at least $500 to afford her summer plans. Let y = number of bracelets sold and x = number of earrings sold. Create and graph the inequality that this situation represents. Choose 3 points within the solution set and explain what each point is representing and if it is a viable solution.