**Directions: Complete all work on a separate piece of paper. Use graph paper any time you are asked to graph something. Problems #1-45 are all no calculator.**

**Solve each system by graphing. Write no solution or infinitely many solutions where appropriate.**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. $y=3x-1$

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

$$3x+3y=12$$ | 1. $4x+y=6$

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

$$y=-3x$$ |
| 1. $3x+y=6$

$$2y=3x-6$$ | 1. $y=x+6$

$$y=2x-7$$ | 1. $y=\frac{2}{3}x+4$

$$2x-3y=3$$ | 1. $2x+y=6$

$$3y=-6x+9$$ |

**Solve each system using substitution. Write no solution or infinitely many solutions where appropriate.**

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

$$y=2x-5$$ | 1. $x=-2y+1$

$$x=y-5$$ | 1. $x+2y=200$

$$x=y+50$$ | 1. $5x+2y=6$

$$y=-\frac{5}{2}x+1$$ |
| 1. $2x+5y=-6$

$$4x+y=-12$$ | 1. $4x+3y=-3$

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

$$4x+6y=6$$ | 1. $2x+5y=62$

$$3x-y=23.3$$ |
| 1. $-5x+y=6$

$$2x-3y=60$$ | 1. $-3x+2y=-6$

$$-2x+y=6$$ |

**Solve each system using elimination. Write no solution or infinitely many solutions where appropriate.**

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

$$3x-2y=-3$$ | 1. $x+y=30$

$$x-y=6$$ | 1. $x+2y=9$

$$3x+2y=7$$ | 1. $4x-3y=11$

$$3x-5y=-11$$ |
| 1. $7x+3y=25$

$$-2x-y=-8$$ | 1. $-2x+3y=47$

$$-4x+6y=94$$ | 1. $-3x+2y=0$

$$-3x+5y=9$$ | 1. $8x-2y=58$

$$6x-2y=40$$ |

**Graph each linear inequality.**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. $y\geq -4$
 | 1. $x+y<-2$
 | 1. $x>2$
 | 1. $4x+y>-6$
 |
| 1. $-3x+y\leq -3$
 | 1. $y\leq \frac{3}{4}x+1$
 | 1. $x-y>4$
 | 1. $6x-4y>-16$
 |
| 1. $y<-5x+9$
 | 1. $6x-4y<-12$
 | 1. $-7x+3y<-18$
 | 1. $16x+6y>36$
 |

**Solve each system by graphing.**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. $x<7$

$$y>2$$ | 1. $y<2x-3$

$$-2x+y>5$$ | 1. $y<-5x+6$

$$y>2x-1$$ | 1. $y\leq -\frac{1}{2}x+3$

$$-5x-3y\geq -6$$ |
| 1. $5x+4y<1$

$$-8y\geq 10x-24$$ | 1. $-5x+y>-2$

$$4x+y>1$$ | 1. $x+7y<14$

$$x-6y>-12$$ |

**Directions: Complete all work on a separate piece of paper. You may use a calculator on problems #46-53.**

1. At an ice cream parlor, ice cream cones cost $1.10 and sundaes cost $2.35. One day, the receipts for a total of 172 cones and sundaes were $294.20. How many cones were sold?
2. You purchase 8 gallons of paint and 3 brushes for $152.50. The next day, you purchase 6 gallons of paint and 2 brushes for $113.00. How much does each gallon of paint and each brush cost?
3. Your teacher is giving a test worth 100 points containing 40 questions. There are two point and four point questions on the test. How many of each type of question are on the test?
4. The math club and the science club had fundraisers to buy supplies for a hospital. The math club spent $135 buying six cases of juice and one case of bottled water. The science club spent $110 buying four cases of juice and two cases of bottled water. How much did a case of juice cost? How much did a case of bottled water cost?
5. Suppose you bought supplies for a party. Three rolls of streamers and 15 party hats cost $30. Later, you bought 2 rolls of streamers and 4 party hats for $11. How much did each roll of streamers cost? How much did each party hat cost?
6. A new company is creating a parking lot for their warehouse so their employees can park. They need a total of 450 spaces and have budgeted $2,766 for the project. If full sized car spaces cost $7 and compact car spaces cost $4 how many full sized car spaces and compact car spaces will there be?
7. Suppose you intend to spend no more than $60 buying books. Hardback books cost $12 and paperbacks cost $5. How many books of each type can you buy?
	1. Write a linear inequality that describes the situation.
	2. Graph the inequality.
	3. Write two possible solutions to the problem.
8. Suppose that for your exercise program, you either walk 5 miles per day or ride your bicycle 10 miles per day. How many days will it take for you to cover a distance of at least 150 mi?
	1. Write a linear inequality that describes the situation.
	2. Graph the inequality.
	3. Write two possible solutions to the problem.