



Name _____ m. of 3 = multiples of 3

Math PLUS Homework Outline – Unit 5: Systems

Date	Lesson/Objective	Homework	Checked
Tues Oct. 18	After test.....Solve Systems by Graphing	HW 5-1	
Wed. Oct 19	Solve Systems by Substitution	HW 5-2	
Thurs. Oct. 20	Solve Systems by Elimination	HW 5-3	
Fri. Oct. 21	Practice all Methods	HW 5-4	
Monday Oct. 24	Linear Inequalities and Systems of Ineq.	HW 5-5 and HW 5-6	
Tues. Oct. 25	Review	Complete Review WS	
Wed. Oct. 26	Test on Unit 5		
Thurs. Oct. 27	Application Problems for Systems Do Test Corrections and Practice for Retest	HW 5-7	
Friday Oct. 28	More Application Problems for Systems RETEST for Unit 5	HW 5-8	

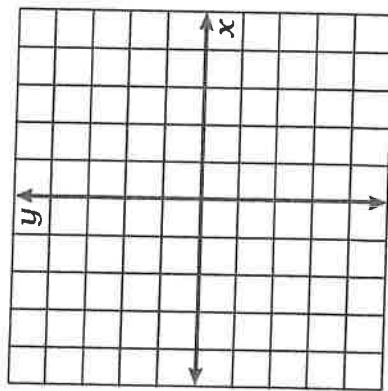
Graph each + look for point of intersection

What Did the Teacher Do With Ogar's Cheese Report?

Solve each system of equations by graphing. Cross out the letters above each correct answer. When you finish, the remaining letters will tell you the answer to the title question.

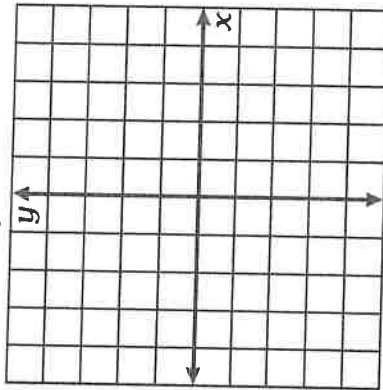
1. $y = \frac{3}{2}x - 1$

$y = -x + 4$



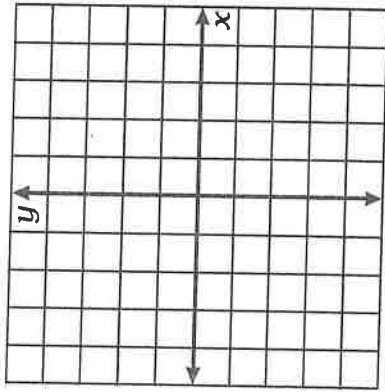
2. $y = \frac{1}{3}x + 2$

$y = -\frac{4}{3}x - 3$



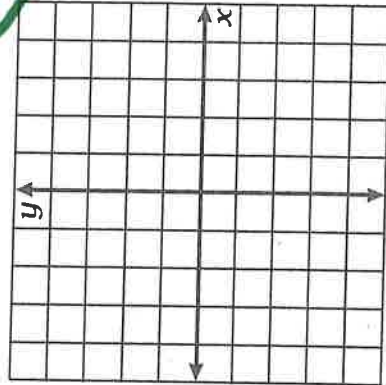
3. $y = 2x + 1$

$-2x + 3y = -9$



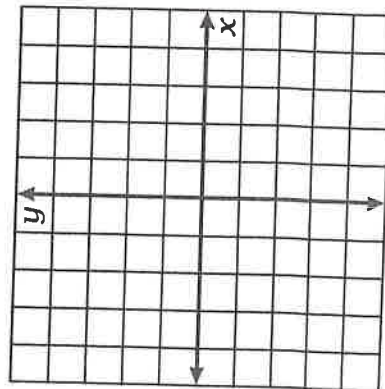
4. $3x + y = 0$

$x - y = 4$



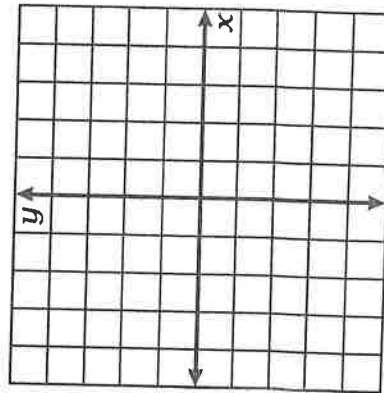
5. $-3x + 4y = 8$

$x + 2y + 6 = 0$



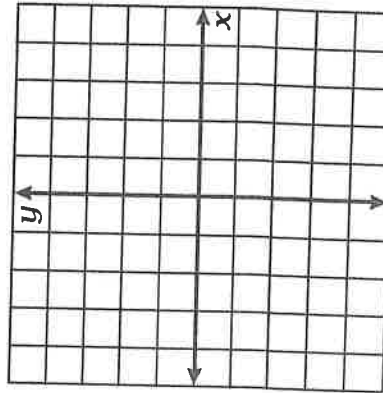
6. $7x - 5y = 20$

$-8x - 3y = 12$



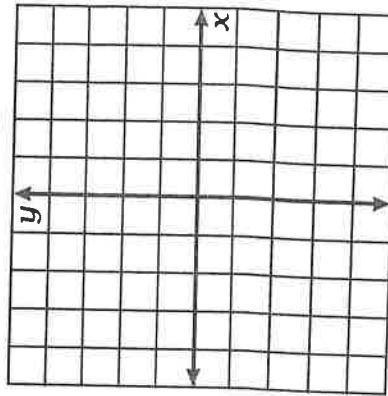
7. $-x - 4y = 12$

$20x + 80y = 0$

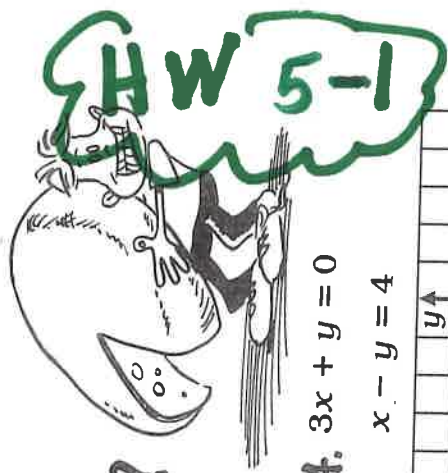


8. $30x + 50y - 100 = 0$

$3x - 15y - 30 = 0$



SH	HE	ES	TO	GR	AB	TH	AT	OP	SP	ED	QU	IT
(-3, 1)	(4, 3)	(-4, -1)	(5, -1)	(-2, 4)	(-3, -5)	no solution	(-2, -3)	(2, 2)	(0, -4)	(-4, 0)	(1, -3)	(1, -1)



DID YOU HEAR ABOUT the antelope who was getting dressed when he was trampled by a herd of buffalo?

Well,	1	2	3	4	5	6
7	8	9	10	11	12	13

Solve each system of equations by the substitution method. Write the word next to the correct answer in the box containing the exercise number.

Do All Work on Notebook Paper

1. $y = 3x$
 $5x + 2y = 44$

2. $x = 5y - 1$
 $x + 2y = 13$

3. $y = 2x + 7$
 $3x - y = -9$

4. $-2x + 3y = 11$
 $x = 4y - 3$

5. $y = 6x - 5$
 $y = -x + 9$

6. $-3x + y = 7$
 $5x + 2y = 3$

7. $x - y = 11$
 $3x + 10y = -6$

8. $-4x + y = 4$
 $2x + 2y = 13$

9. $x + y = 1$
 $5x - 4y = -7$

10. $-5x + 3y = 11$
 $x - 2y = 2$

11. $x + 9y = -1$
 $2x + 4y = 5$

12. $-5x + y = 35$
 $3x + 2y = -21$

13. A math test is worth 100 points and has 30 problems. Each problem is worth either 3 points or 4 points. How many 4-point problems are there?

- (-2, 2) OFTEN
- (1/2, -3) RANGE
- (9, 2) FAR
- (-7, 0) STAMPED
- (2, 7) KNOW
- (-1/3, 4/3) FIRST
- (4, 12) AS
- (-1, -3) HOME
- (8, -3) WAS
- (7/2, -1/2) DRESSED
- 14 WESTERN
- (-7, -1) WE
- (-1/3, -1) BIGGEST
- (-1, 4) THIS
- 10 ANTELOPE
- (-4, -3) SELF
- (-2, 3) AS
- (2, 1) COWBOYS
- (1/2, 6) THE
- (-7, -1/2) DEFENSE



What Does Cate Often Call Her Twin Sister?



Solve the system of equations using multiplication with the addition method. Then cross out the letter next to the correct answer. When you finish, the answer to the title question will remain.

A D O R U P B L E I S C E R A T W O I E N

(3,1)
(1, -5)
(2, -3)
(2, -1)
(-2, 4)
56, 44
(4, 0)
(-2, -5)
(1, 4)
(-1, 1)
65, 35
(0, 2)
(5, -2)
(5, -3)
(-1, -3)
(0, -4)
(-2, -2)
(3, -6)
(4, 3)
(-2, 1)
72, 28
(5, 0)

1 $3x + 2y = 11$
 $7x - y = 3$

3 $5x + 2y = -8$
 $9x - 4y = -22$

5 $2x + 5y = 11$
 $-3x + 8y = -1$

7 $4x - 5y = -28$
 $-9x - 2y = 10$

9 $-7x + 4y = -6$
 $2x - 5y = 21$

11 $-4x - 9y = 1$
 $-x + 2y = -4$

13 An algebra teacher drove by a farmyard full of chickens and pigs. The teacher happened to notice that there were a total of 100 heads and 270 legs. How many chickens were there? How many pigs were there?

Do All Work on Notebook Paper

2 $3x - 4y = 18$
 $x + 3y = -7$

4 $x - 5y = 15$
 $4x - 3y = 26$

6 $7x - 3y = 2$
 $5x + 4y = -17$

8 $2x + 3y = 10$
 $3x - 10y = 15$

10 $8x + 3y = -12$
 $6x + 5y = -20$

12 $5x - 12y = -16$
 $-3x + 4y = 0$

What Do You Get If You Drop a Grand Piano Down a Mine Shaft?

HW 5-4

Solve each system of equations below using multiplication with the addition method. Find the solution at the bottom of the page and write the letter of that exercise in the box above it.

(A) $2(x - y) = 4$
 $3x + y = 10$

(I) $a - 2b = -5$
 $3(2a + b) = 0$

(R) $5x - y = 2x + 9$
 $3x + 4y = -6$

(T) $2(x - 3y) = x + 4$
 $3x + 8 = 5x - y$

(A) $\frac{1}{3}(2x + y) = 1$
 $x + y = 4$

(O) $\frac{1}{2}(m - 3n) = 5$
 $3(m + 4n) = -12$

(F) $\frac{x}{3} + \frac{y}{2} = -4$
 $x - 3y = 6$

(M) $\frac{x}{2} + \frac{y}{5} = \frac{13}{10}$

$3(x - y) = x - 10$

(N) $\frac{1}{5}(x + 2y) = -2$

$\frac{x}{4} - \frac{3y}{2} = \frac{15}{2}$

(L) $\frac{a}{6} + \frac{b}{4} = \frac{5}{2}$

$\frac{2a}{3} - \frac{b}{2} = -2$

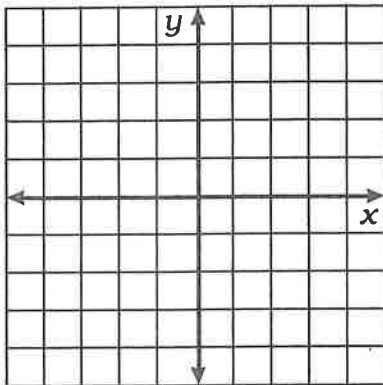
(4, -3)	(3, -4)	(-6, -4)	(3, 1)	(2, -5)	(1, 4)	(0, -5)	(2, -3)	(-1, 5)	(-1, 1)
(-1, 5)	(-1, 1)	(3, 8)	(4, 0)	(1, -2)	(-1, 2)	(4, -2)	(-6, 0)		

() () ()

What Did the Boy Tree Say to the Girl Tree?

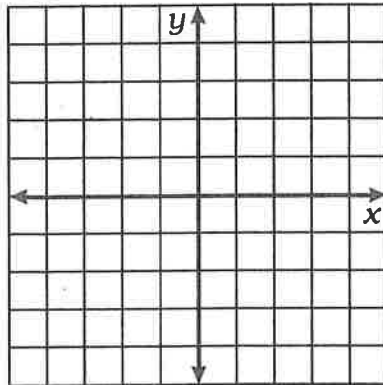
Graph each inequality. Circle the number-letter pair for each statement that correctly describes the location of solutions. Write the letter in the box at the bottom of the page with that number.

1. $-x + 2y \leq 4$



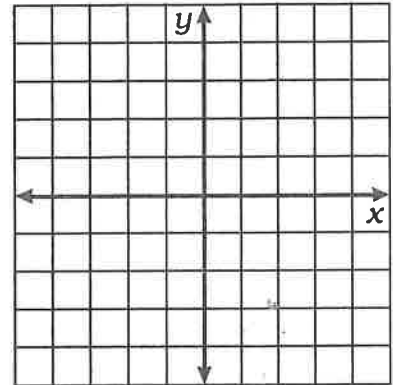
- 10•R** All points on the boundary line.
4•I All points below the line.

2. $2x + 3y < 3$



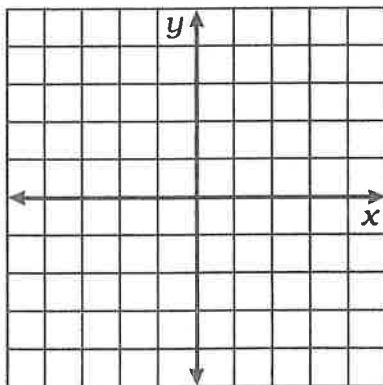
- 1•A** All points on the boundary line.
13•E All points below the line.

3. $3x - 2y \leq 6$



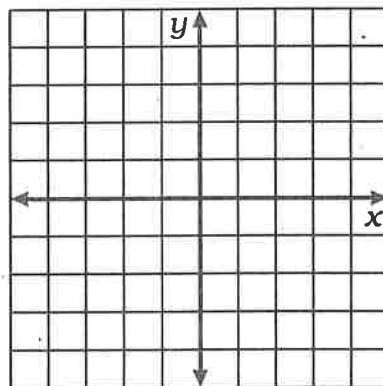
- 1•I** All points on the boundary line.
9•D All points below the line.

4. $x + y + 2 \geq 0$



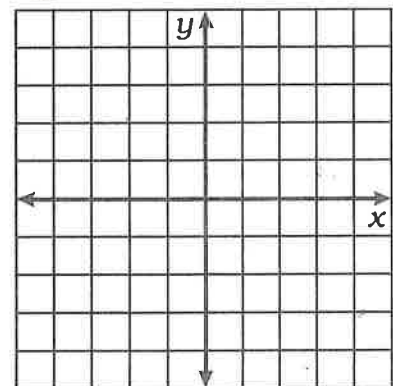
- 6•E** All points on the boundary line.
14•N All points below the line.

5. $2x - y > 1$



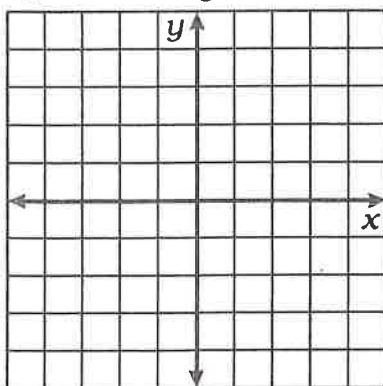
- 3•S** All points on the boundary line.
9•I All points below the line.

6. $x + 4y > 0$



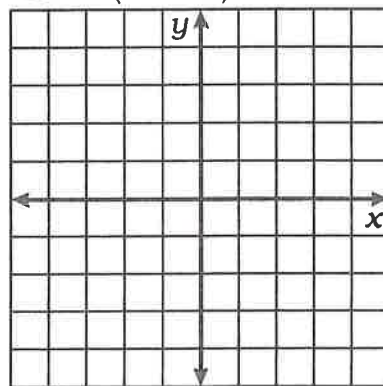
- 8•T** All points on the boundary line.
5•R All points below the line.

7. $8x + 3y < x - 9$



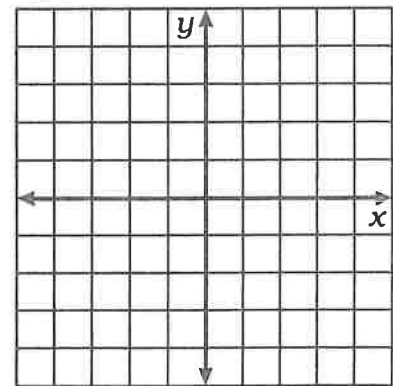
- 12•S** All points on the boundary line.
14•W All points below the line.

8. $2(x - y) \geq 5$



- 3•P** All points on the boundary line.
8•F All points below the line.

9. $y - 2 \leq 0$



- 12•Y** All points on the boundary line.
5•N All points below the line.

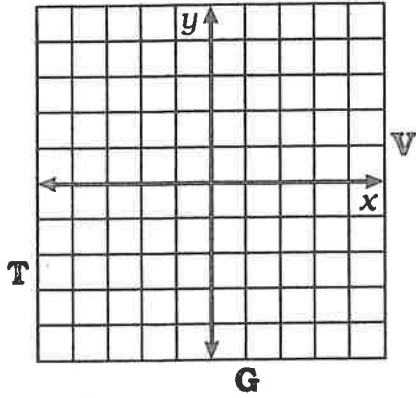
1	2	3	4	5	6	7	8	9	10	11	12	13	14
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HW5-6

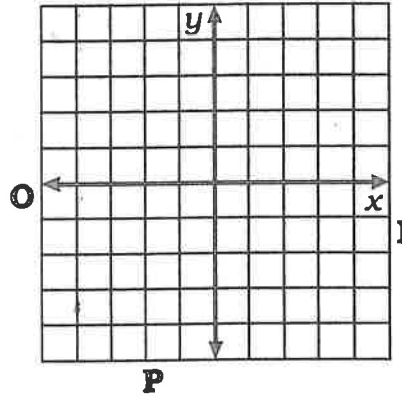
Which Member of Fred Ferd's Family Thinks He's a Pen?

Show the solution region for each system with crosshatching or shading. The crosshatching or shading, if extended, would cover a letter. Write this letter in each box with the exercise number.

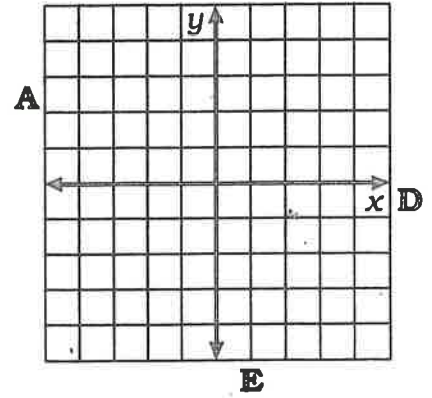
1. $y \geq \frac{3}{4}x - 2$
 $y \leq 1$



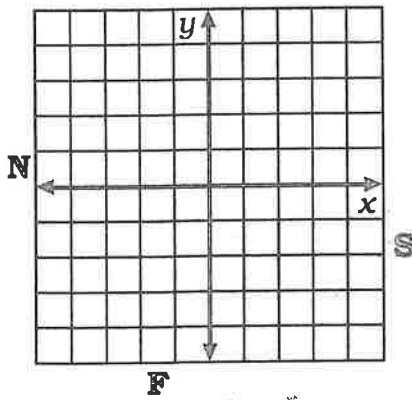
2. $y \geq -2x - 3$
 $y \leq \frac{1}{3}x + 2$



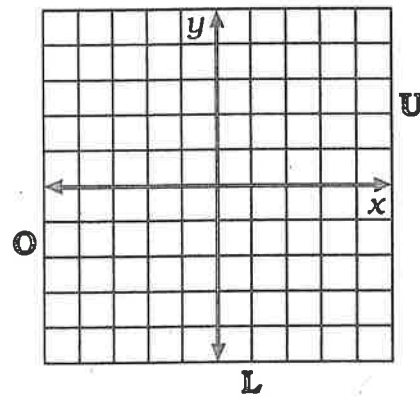
3. $y < \frac{3}{2}x + 3$
 $y < -x + 1$



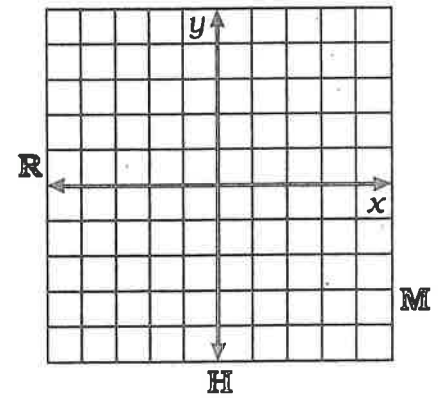
4. $y \leq x$
 $5x + 3y > -6$



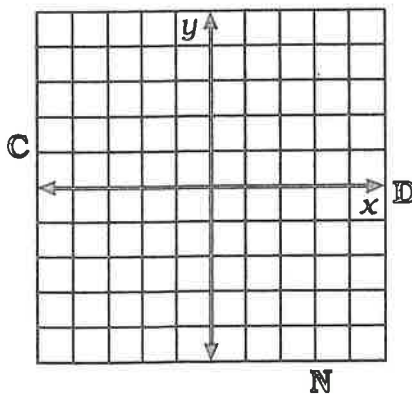
5. $y + 3 > 0$
 $-2x - 5y \geq 5$



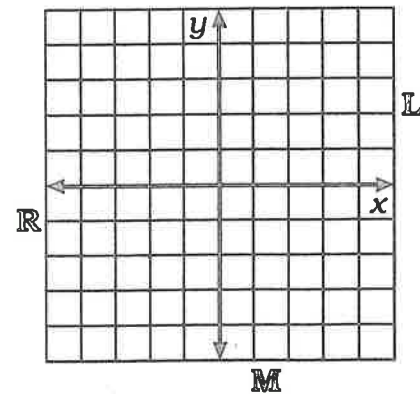
6. $x < 2$
 $x - 2y > 6$



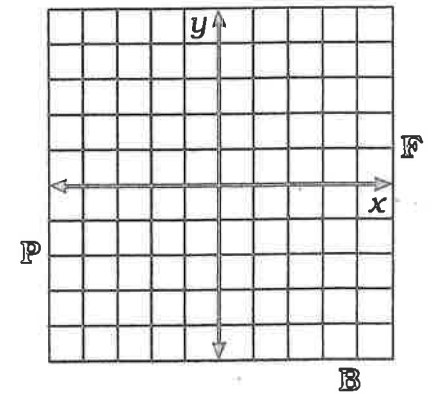
7. $8x + 12y < 24$
 $35x - 20y \leq 80$



8. $10x + 10y \leq 30$
 $y - 3x > 0$



9. $y + 2 \leq 0$
 $2 - x \leq 0$



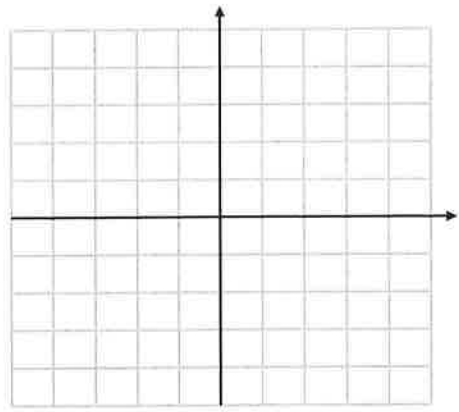
6	2	4	9	2	7	9	8	5	1	6	3	8
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SHOW ALL YOUR WORK!!!!

(All questions are worth 2 points each!)

1. Solve the following by **graphing**:
 $y = 2x + 3$
 $4x - 2y = 6$



Solution _____

2. Solve the following by **substitution**:
 $x = 2y - 6$
 $2x + 3y = 2$

Solution _____

3. Solve the following by **elimination**:
 $5x + 6y = 13$
 $-5x + 2y = 11$

Solution _____

4. Solve the following by **elimination**:
 $4x + 3y = 11$
 $3x - y = 5$

Solution _____

5. Solve the following by **elimination**.
 $3x - 4y = 8$
 $5x + 3y = -6$

Solution _____

Application/Word Problems – Set up a system of equations and solve by graphing, substitution, or elimination in problems 6 and 7.. State your solution. Show all work!

6. Tickets for a school play cost \$4 for adults and \$2 for students. At the end of the play, the school sold a total of 105 tickets and collected \$360. Find the number of adult tickets sold and the number of student tickets sold.

7. The width of Mrs. Light's pool is 4 feet less than twice the length. The perimeter of the pool is 64 feet. What are the dimensions of the pool?

8. Uncle Henry has a cellular phone that costs \$8.95 per month plus \$0.60 per minute for each call. Aunt Helen has a cellular phone that costs \$11.95 per month plus \$0.35 per minute for each call.

Which equation determines the number of minutes when the 2 plans cost the same, and what is that value?

- A. $8.95 + 0.35m = 11.95 + 0.60m$, 20 minutes
- B. $8.95 + 0.60m = 11.95 + 0.35m$, 12 minutes
- C. $8.95 + 0.35m = 11.95 + 0.60m$, 24 minutes
- D. $8.95 + 0.60m = 11.95 + 0.35m$, 15 minutes

9. Lucy and Barbara began saving money the same week. The table below shows the models for the amount of money Lucy and Barbara had saved after x weeks.

Lucy's Savings	$f(x) = 10x + 5$
Barbara's Savings	$g(x) = 7.5x + 25$

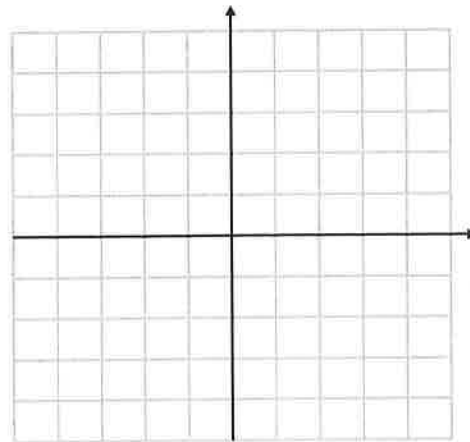
After how many weeks will Lucy and Barbara have the same amount of money saved?

- A. 1.1 weeks
- B. 1.7 weeks
- C. 8 weeks
- D. 12 weeks

10. Graph the following system of inequalities and find three possible solutions.

$$y < \frac{1}{2}x + 2$$

$$4y > -2x - 4$$



Solutions:

11. The local community center offers 2 options .

- With a season pass, the cost is \$60 plus \$2 per visit.
- Without a season pass, the cost is \$5 per visit.

- a) Write a system of equations to represent this situation.
- b) When will the cost be the same?

12. If a linear system of equations has no solution then what must be true about the graph of the system?

- a) The lines are perpendicular.
- b) The lines are parallel.
- c) The lines are the same.
- d) The lines intersect at only one point.

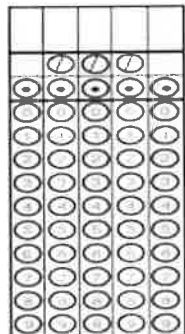
13. You are in charge of buying snacks for the ballgame on Friday night. You can buy a package of cookies (**c**) for \$3 and a case of soda (**s**) for \$5. You only have \$45 to spend. Which inequality represents this situation?

- a) $3c + 5s \geq 45$
- b) $3c + 5s \leq 45$
- c) $5c + 3s > 45$
- d) $5c + 3s < 45$

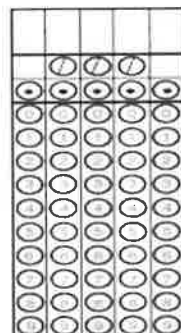
14. Michael was solving a system of linear equations and found that the solution was $0 = 0$. How should Michael interpret the results?

- a) The solution to the system is $(0,0)$.
- b) This result is impossible; Michael must have made a mistake.
- c) There is no solution to the system.
- d) There are infinitely many solutions to the system.

15. Find the midpoint between $(10, 6)$ and $(-4, 2)$.



16. Find the slope of AB given the points $A(-8, 3)$ and $B(7, 8)$.



17) Write the equation of a line with a slope of 2 that passes through $(-6,1)$

What Kind of Monkey Can Fly?

Solve each problem below using a system of two equations in two variables. Find the solution in the answer column and notice the letter next to it. Write this letter in each box that contains the number of that exercise.

- ① Three times the larger of two numbers is equal to four times the smaller. The sum of the numbers is 21. Find the numbers.
- ② The difference between two numbers is 16. Five times the smaller is the same as 8 less than twice the larger. Find the numbers.
- ③ The larger of two numbers is 1 more than twice the smaller. The sum of the numbers is 20 less than three times the larger. Find the numbers.
- ④ Two records and three tapes cost \$31. Three records and two tapes cost \$29. Find the cost of each record and each tape.
- ⑤ The sum of two numbers is the same as four times the smaller number. If twice the larger is decreased by the smaller, the result is 30. Find the numbers.
- ⑥ A group of students go out for lunch. If two have hamburgers and five have hot dogs, the bill will be \$8.00. If five have hamburgers and two have hot dogs, the bill will be \$9.50. What is the price of a hamburger?
- ⑦ The price of a sweater is \$5 less than twice the price of a shirt. If four sweaters and three shirts cost \$200, find the price of each shirt and each sweater.
- ⑧ A shipment of TV sets, some weighing 30 kg each and the others weighing 50 kg each, has a total weight of 880 kg. If there are 20 TV sets all together, how many weigh 50 kg?

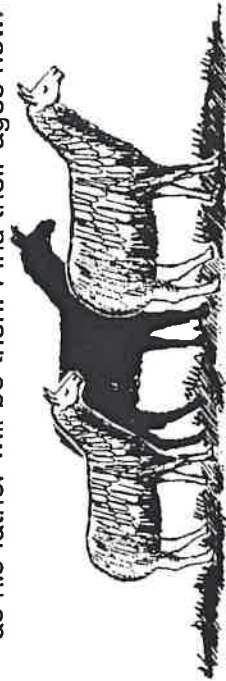
(S)	22, 6
(K)	16, 9
(R)	18, 6
(M)	11, 10
(B)	\$20, \$35
(I)	12, 9
(P)	\$1.35
(N)	13, 6
(O)	14
(T)	\$1.50
(L)	\$8, \$5
(A)	24, 8
(D)	\$23, \$41
(H)	\$5, \$7
(E)	17

2	4	8	6	2	1	5	7	2	7	8	8	3
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FACTS: A “one-L” Lama is a Tibetan monk.
 A “two-L” Llama is a beast of burden.
QUESTION: What is a “three-L” Llama?

Solve each problem using a system of two equations in two variables. Find each answer below and cross out the letter above it. When you finish, the answer to the title question will remain.

- ① Larry is 8 years older than his sister. In 3 years, he will be twice as old as she is now. How old are they now?
- ② Barry is 8 years older than his sister. In 3 years, he will be twice as old as she will be then. How old is each now?
- ③ Jennifer is 6 years older than Sue. In 4 years, she will be twice as old as Sue was 5 years ago. Find their ages now.
- ④ Adam is 5 years younger than Eve. In 1 year, Eve will be three times as old as Adam was 4 years ago. Find their ages now.
- ⑤ Jack is twice as old as Jill. In 2 years, Jack will be 4 times as old as Jill was 9 years ago. How old are they now?
- ⑥ Four years ago, Katie was twice as old as Anne was then. In 6 years, Anne will be the same age that Katie is now. How old is each now?
- ⑦ Five years ago, Tom was one third as old as his father was then. In 5 years, Tom will be half as old as his father will be then. Find their ages now.



S	A	B	A	E	I	T	G	F	A	T	I	R	M	E
26, 20	30, 24	37, 17	9, 14	19, 11	17, 9	16, 10	18, 12	20, 40	15, 35	13, 5	16, 8	18, 42	38, 19	10, 15