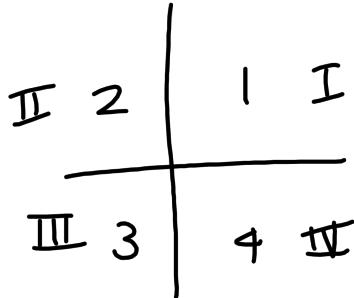# WARM UP -
SAT Practice

Remember, in order to graph these lines on the calculator, you must get into y = mx + b form.

II 2 | 1 I

III 3 | 4 IV

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

$$y = \frac{1}{5}x + 4$$

$$y = \frac{3}{7}x - 4$$

7. If the ordered pair (x, y) satisfies the system of equations above, what is the value of y?

A) 0

B) 7

C) 10

D) 11

$$2x - 3y = -3$$

$$-12 = -4x + y \quad 4x - 12 = y$$

8. In what quadrant will the lines represented by the equations above intersect?

A) Quadrant I

B) Quadrant II

C) Quadrant III

D) Quadrant IV

Sep 10-8:49 AM

3.2 Solving Systems of Linear Equations by Using Substitution & Elimination

Sep 21-12:13 PM

1

Solve by Substitution

1) $3x - y = 13 \rightarrow \dfrac{-y}{-1} = \dfrac{-3x}{-1} + \dfrac{13}{-1} \rightarrow y = 3x - 13$
    $2x + 2y = -10$

1. Isolate one variable.

2. Now substitute into the other equation.

3. Now substitute again.

4. Solution: ($\underline{2}$, $\underline{-7}$)
    Plug in to check soln.

$2(2) + 2(-7) \overset{?}{=} -10$
$4 - 14 = -10 ✓$

$2x + 2(3x - 13) = -10$
$2x + 6x - 26 = -10$
$8x - 26 = -10$
$8x = 16$
$x = 2$

$3(2) - 13 = y$
$6 - 13 \overset{?}{=} y$
$-7 = y$

Aug 3-9:27 PM

Solve by Substitution

2) $3x + 5y = 2$
    $x + 4y = -4 \rightarrow x = -4y - 4$

$x = 4$
$y = -2$
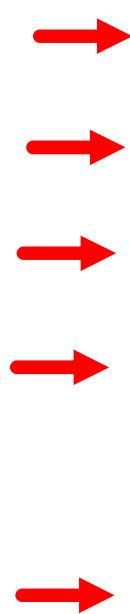
Aug 3-9:27 PM

Solve by Substitution

3) $\dfrac{2x}{2} + \dfrac{4y}{2} = \dfrac{10}{2} \longrightarrow x + 2y = 5$

$3x + 5y = 11 \qquad\qquad x = -2y + 5$

$3(-2y + 5) + 5y = 11$

$-6y + 15 + 5y = 11$

$-y = -4$

$y = 4 \qquad x = -3 \qquad (-3, 4)$

Aug 3-9:27 PM

1) Solve using elimination

$2x - 6y = 19 \qquad\qquad 2x - 6y = 19$

$3(-3x + 2y = 10)3 \qquad -9x + 6y = 30$

$\qquad\qquad\qquad\qquad -7x = 49$

Multiply the entire 2nd eqn. by 3 so that the y's will cancel. $\qquad x = -7 \qquad -3(-7) + 2y = 10$

Same coefficient /different signs $\qquad 21 + 2y = 10$

$\qquad\qquad\qquad\qquad 2y = -11$

Now add the 2 equations. $\qquad\qquad y = -\dfrac{11}{2}$

Next substitute.

Now write as an ordered pair.

$\left(\underline{-7} , \underline{-\dfrac{11}{2}} \right)$

Aug 3-9:44 PM

2) Solve using elimination

$2(-3x + 2y = 7)2$

$6x - 4y = 14$

$-6x + 4y = 14$
$6x - 4y = 14$
$\overline{}$
$0 = 14$

It means the 2 lines are parallel.
No solution

Aug 3-9:44 PM

3) Solve using elimination

$-2(3x + 5y = -3)\overline{2}$ $-6x - 10y = 6$
$3(2x + 4y = -5)3$ $6x + 12y = -15$
 $2y = -9$
$2x + 4\left(\frac{-9}{2}\right) = -5$ $y = -\frac{9}{2}$

How can you get one of the variables to cancel out?

$2x - 18 = -5$
$2x = 13$
$x = 13/2$ $\left(\frac{13}{2}, -\frac{9}{2}\right)$

Aug 3-9:44 PM

4

4) Solve using elimination

$6x = 10y - 12$ → $6x - 10y = -12$

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

$6x - 10y = 12$
$-6x + 10y = 12$
$0 = 0$

Same line
infinite solutions

Sep 27-7:02 AM

GO COUGARS!

HW 3.2
p. 128 #1-11 odd,
#32-35, 37-39,
and #45-46

Aug 3-9:27 PM

EXTRA RANDOM SLIDES

Feb 2-9:51 PM

5) Solve by setting up a system
of equations and showing all
work.

 At Renaldi's pizza, 2 sodas and four slices of pizza-
of-the-day cost $20.50. Three sodas and 10 slices
of pizza cost $47.75. Find the cost of each item.

Aug 3-9:44 PM

Word Problems

4) To paint the gym for Homecoming, Senate needs 25 gallons of lead paint and has $141 dollars budgeted for the project. If the blue lead paint costs $5 a gallon and the gold lead paint costs $7, how many gallons of each color of lead paint should they buy?

Aug 3-9:27 PM

4) To raise money, Senate is planning to let the kids in Alg II bring their dogs to the Homecoming Carnival for a dog show. All owners and dogs would be included in the show. Sydney and Lily had to report back about the number in attendance. They reported back, "I counted 50 heads and 130 feet in the dog show."
How many owners and dogs did Senate have at the fundraising dog show?

Aug 3-9:27 PM

WARM UP

Years Since 1980	# Bronco Fans	# Patriot Fans
0	25	50
1	32	49
2	39	38
3	40	36
4	44	34
5	50	30

1) Write a linear regression equation for Bronco Fans and Patriot fans.
In what year will the number of fans be equal?

Sep 8-10:08 AM

Questions 5 and 6 refer to the following information.

The Number of Hits and Times at Bat by Players on a Major League Baseball Team

Number of hits (y-axis): 0, 25, 50, 75, 100, 125, 150, 175, 200, 225
Number of times at bat (x-axis): 0, 100, 200, 300, 400, 500, 600, 700

The scatterplot above shows the number of hits and the number of times at bat by each of 20 players on a major league baseball team. The line of best fit for the data is also shown.

5

Which of the following statements about the relationship between the number of times at bat and the number of hits is true?

A) As the number of times at bat increases, the number of hits decreases.

B) As the number of times at bat increases, the number of hits increases.

C) As the number of times at bat increases, the number of hits remains constant.

D) As the number of times at bat decreases, the number of hits increases.

6

For the player with 450 times at bat, the actual number of hits the player had is approximately how many fewer than the number of hits predicted by the line of best fit?

A) 10

B) 20

C) 30

D) 40

13. A street vendor sells two types of news-papers, one for $0.25 and the other for $0.40. If she sold 100 newspapers for $28.00, how many newspapers did she sell at $0.25?

$$x + y = -6$$
$$y - 4x = 4$$

Sep 11-11:56 AM

WARM UP - SAT Practice

WITHOUT CALCULATOR

$$4x - 2y + 3 = 8$$
$$3x + 6y = 8y - x + 5$$

4. How many solutions does the system of equations shown above have?

A) 0

B) 1

C) 2

D) Infinitely many

WITH CALCULATOR

$$y = \frac{1}{5}x + 4$$
$$y = \frac{3}{7}x - 4$$

7. If the ordered pair (x, y) satisfies the system of equations above, what is the value of y?

A) 0

B) 7

C) 10

D) 11

$$2x - 3y = -3$$
$$-12 = -4x + y$$

8. In what quadrant will the lines represented by the equations above intersect?

A) Quadrant I

B) Quadrant II

C) Quadrant III

D) Quadrant IV

Sep 10-4:09 PM

Sep 9-3:08 PM