

Name: _____ Date: _____

1.	Which number is prime? Solution: A number that is divisible only by 1 and itself
2.	Find the GCF for 14 and 21. Solution: Factors of 14=2,7 Factors of 21=3,7 GCF=7
3.	Find the GCF for 23 and 37. Solution: 37 is prime therefore GCF of 37 and 23 is 1
4.	Evaluate. $(15 - 5) \div [(12 \div 2 \times 2) - 2]$ Solution: $(10) \div [(12) - 2]$ $10 \div 10$ 1
5.	Evaluate. $- -43 $ Solution: $ -43 = 43$ therefore $- -43 = -43$
6.	Find the median. 25, 19, 22, 34, 36 Solution: First sort the numbers in ascending order. We get 19 22 25 34 36 Median is middle value = 25
7.	Find the median. 22, 19, 33, 41, 42, 3, 48, 35 Solution: Sorted list is 3 19 22 33 35 41 42 48 we have a tie for middle value So we take the average of 33 and 35 which is 34.

8. Evaluate. $(-4)^2 + 2$

Solution:
 $16 + 2 = 18$

9. Evaluate. $8 + 2 \times 5 - 24 \div 6 \times 2$

Solution:
 $8 + 2 \times 5 - 24 \div 6 \times 2$
 $8 + 2 \times 5 - 4 \times 2$
 $8 + 10 - 8$
 10

10. Combine like terms.

$$3r + 4s - 6r$$

Solution:
 $3r + 4s - 6r$
 $4s - 3r$

11. Multiply.

$$a^4 b^2 \times ab^3$$

Solution:
 $a^4 b^2 \times ab^3 = a^{4+1} b^{2+3} = a^5 b^5$

12. Divide.

$$\frac{50p^9q^5}{10pq^2}$$

Solution:
 $\frac{50}{10} p^{9-1} q^{5-2}$
 $5p^8q^3$

13.	<p>Is -4 a solution to the equation $7x - 5 + 3x = 6 + x - 10$</p> <p>Solution: Check by plugging in 4. $7(4) - 5 + 3(4) = 6 + 4 - 10$ $28 - 5 + 12 = 0$ $35 = 0$ $35 = 0$ is not true therefore 4 cannot be a solution</p>
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14.	<p>Solve. $21 - 7x = 14$</p> <p>Solution: $21 - 14 = 7x$ $7 = 7x$ $x = 1$</p>
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15.	<p>The length of one of the equal legs of an isosceles triangle is 8 cm less than 4 times the length of the base. If the perimeter is 29 cm, find the length of one of the equal legs.</p> <p>Solution: Let the length of the base be x. The length of one equal side is given as $4x - 8$. Perimeter of this isosceles triangle is given as $2(4x - 8) + x = 29$ Solve for x to get: $8x - 16 + x = 29$ $9x = 45$ $x = 5$ Length of base is 5 then length of side must be $4(5) - 8 = 12$ cm</p>
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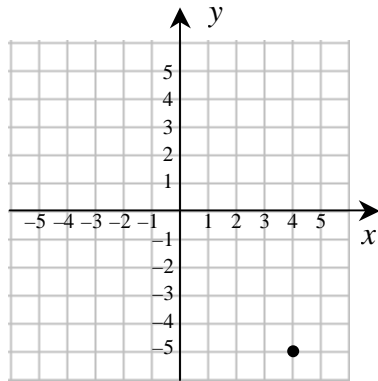
16.	<p>The perimeter of a rectangle is to be no greater than 300 in., and the length must be 125 in. Find the maximum width of the rectangle.</p> <p>Let width be x. Then</p> $2x + 2(125) \leq 300$ $2x \leq 50$ $x \leq 25$ <p>Therefore maximum width is 25 inches.</p>
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17. Which of the ordered pairs is a solution for the equation $5x - 4y = 20$?

Solution:

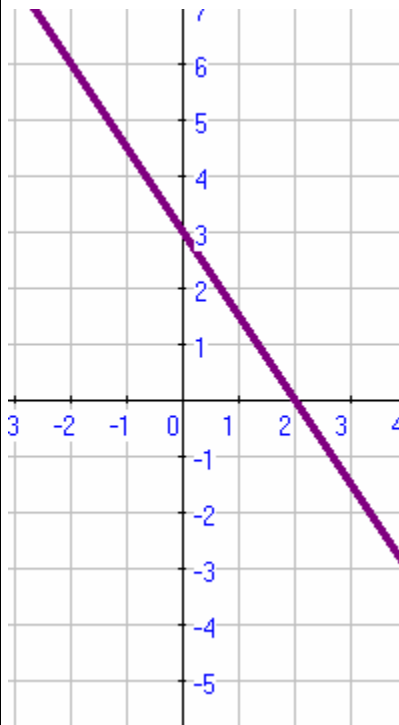
No ordered pairs given. But basically given an ordered pair (x,y) simply plug in x and y into the equation to see if the equation holds ($0=0$).

18. Give the coordinates of the point graphed below.

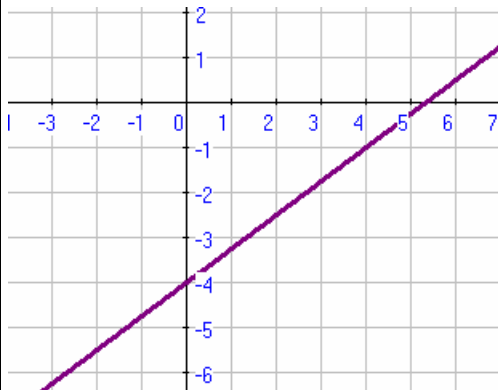


X=4 and Y=-5 therefore co-ordinates are (4,-5)

19. Graph $3x + 2y = 6$.



20. Graph $y = \frac{3}{4}x - 4$.



21. Find the y-intercept.
 $-3x + y = -15$

Solution: Y intercept is where $y=0$. So $-3x=-15$ and thus $x= 5$.
Therefore y-intercept is $(5,0)$.

22. Determine which two equations represent parallel lines.

Explain your answer for to earn credit on the choice.

- (a) $y = 5x - 6$
- (b) $y = -5x + 6$
- (c) $y = 5x + 3$
- (d) $y = -\frac{1}{5}x - 6$

Solution: Parallel lines have the same slope/ The only two lines with the same slope are a and c.
So the correct choice is C.

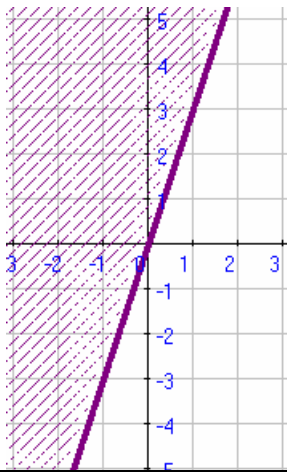
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|----|-------------|
| A) | (a) and (b) |
| B) | (b) and (c) |
| C) | (a) and (c) |
| D) | (a) and (d) |

23. Write the equation of the line passing through $(-3, -3)$ and $(-3, 1)$.
Solution:

The slope of the line is $\frac{1 - (-3)}{-3 - (-3)} = \frac{4}{0}$, which is not a number. Therefore

for all values of y the x -coordinate is fixed at -3 . So $x = -3$ is the equation of the line passing through the above points.

24. Graph the inequality.
 $y \geq 3x$



25. Given $f(x) = 5x + 5$, find $f(a + 4)$.

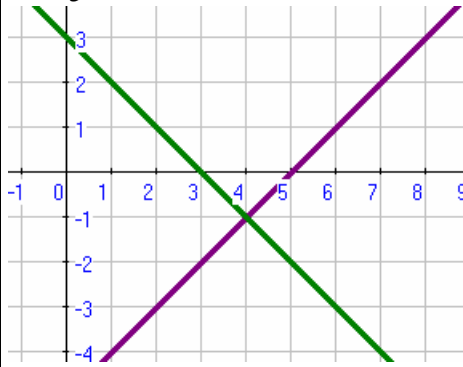
Solution: Simply plug in $a + 4$ for x to get

$$f(a + 4) = 5(a + 4) + 5 = 5a + 25$$

26. Solve the system by **graphing**.

$$x - y = 5$$

$$x + y = 3$$



Solution is $x=4$ and $y=-1$

27. Solve the system by **addition**.

$$5x - 3y = 13$$

$$4x - 3y = 11$$

Solution: Add -1 times the second equation into the first one.

$$+5x - 3y = +13$$

We get $-4x + 3y = -11$. Then solve for y to get $y=-1$

$$x = 2$$

28. Solve the system by **substitution**.

$$2x - 2y = 6$$

$$y = 2x - 13$$

Substitute y (from 2nd equation into the first one to solve for x).

$$2x - 2(2x - 13) = 6$$

We get $-2x + 26 = 6$

$$-2x = -20$$

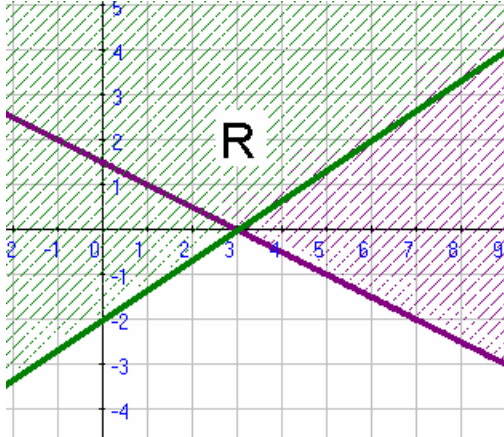
$$x = 10$$

then substitute x in equation 2, to get $y=7$

29. Solve the following system of linear inequalities by graphing.

$$x + 2y \geq 3$$

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



Inequality 1 in purple – Inequality 2 in green.

Region R is shaded/required by both therefore is the solution to the whole system.

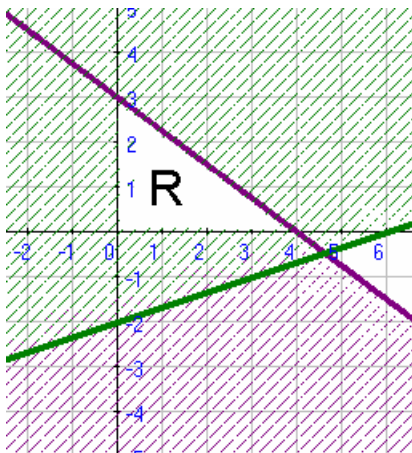
30. Solve the following system of linear inequalities by graphing.

$$3x + 4y \leq 12$$

$$x + 3y \leq 6$$

$$x \geq 0$$

$$y \geq 0$$



The first inequality is show by the purple line

The second inequality is show by the green line

Third and fourth inequalities restrict us to positive values for x and y (i.e points to the right of the y-axis and above the x-axis).

Therefore the area that defines system is shown as R