



Name: _____

CCSD Math Summer Calendar

Entering Algebra 2

- Complete the Math Calendar and return to your math teacher on the first day of school.
- You may finish these at your own pace. Most weeks have a helpful, optional tutorial video link.
- Show ALL WORK on a separate sheet of paper with problem numbers CLEARLY labeled

Week of June 1st: Equations

Video Links:

Writing linear equations given the table and graph: <https://youtu.be/RwvbcfzrMws>

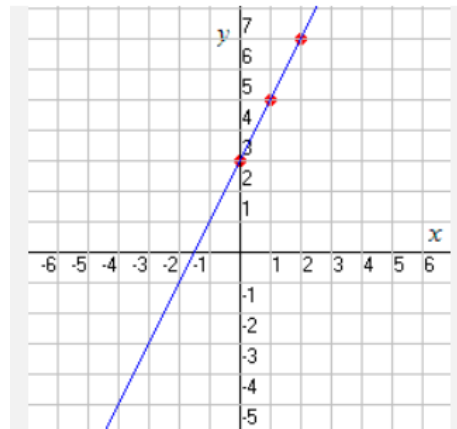
Solving linear equation word problem: <https://youtu.be/xKH1Evwu150>

Solving absolute value equations: https://youtu.be/_cHbhzQVd7Y

Problem 1a: A fitness club opens with 80 members. Each month the membership increases by 15 members. Which equation represents the relationship between the number of months the club has been opened, x , and the total fitness club membership, y ?

- A. $y=15x$ B. $y=15x+80$ C. $y=x+15$ D. $y=80x+15$

Problem 2a: Which equation represents the following graph?



- A. $y = 3x + 2$ B. $y = -2x + 3$ C. $y = 2x + 3$ D. $y = -3x + 2$

Problem 3a: Which equation best represents the relationship between x and y in the table shown?

x	y
0	5
1	10
2	15
3	20
4	25
5	30

- A. $y = 5x + 5$ B. $y = 1/5x + 5$ C. $y = 15x + 5$ D. $y = 10x + 5$

Problem 4a: For a field trip 4 students rode in cars and the rest filled nine buses. How many students were in each bus if 472 students were on the trip?

- A. 36 B. 48 C. 52 D. 64

Problem 5a: Solve $|v + 8| - 5 = 2$

- A. $\{-1, -15\}$ B. $\{-1, -5\}$ C. $\{-15, 15\}$ D. No Solution

Week of June 8th: Factoring sums and differences of cubes

Video Links:

<https://youtu.be/eXjxF1I9o4E>
<https://youtu.be/CxcP4yIUP5w>
<https://youtu.be/T0ItI7q6Q1U>

Problem 1b:

$$64x^3 - 1$$

Problem 2b:

$$4x^3 - 108$$

Problem 3b:

$$8x^3 - 1$$

Problem 4b:

$$a^3 + 64$$

Problem 5b:

$$250x^3 + 128$$

Week of June 15th: Factor with any method

Video Link: <https://www.youtube.com/watch?v=mXvt9OumKH8>

Factor each of the problems below completely

Problem 1c:

$$14x^3 + 21x^2 + 16x + 24$$

Problem 2c:

$$64k^3 + 8k^2 + 24k + 3$$

Problem 3c:

$$5n^2 - 39n + 54$$

Problem 4c:

$$2b^2 - 11b - 6$$

Problem 5c:

$$9x^2 - 24x + 16$$

Week of June 22nd:

Video Link:

Problem 1d: Evaluate the expression

$$-4v + 3(w + 2v) - 5w \quad v = -2 \quad w = 4$$

Problem 2d: Solve the equation

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

Problem 3d: Simplify the expression

$$\frac{(3r^{-2}s^3t^0)^{-3}}{3rs}$$

Problem 4d: Find the slope of the given two points

(8,10), (-7,14)

Problem 5d: Write the equation of the line given two points: (8,10), (-7,14)

<https://www.youtube.com/watch?v=lzqTD0JWwhY&feature=youtu.be>

Week of June 29th: Polynomials

Video Link:

Polynomial Definition: <https://www.youtube.com/watch?v=Vm7H0VTllco>

Polynomial Operations: <https://www.youtube.com/watch?v=ZvL9aDGNHqA>

Problem 1e: What is a polynomial? Give 2 examples

What is not a polynomial? Give 2 examples

Problem 2e: Add the following polynomials

a.) $(19x^2+12x+12)+(7x^2+10x+13)$

b.) $(4x^2-6x+7)+(-19x^2-15x-18)$

Problem 3e: Subtract the following polynomials

a.) $(6x+14)-(9x+5)$

b.) $(-18x^2+4x-16)-(15x^2+4x-1)$

Problem 4e: Multiply the following polynomials

a.) $6(x^2+2x+7)$

b.) $4x(1-x)$

c.) $(x-3)(x+4)$

d.) $(x+5)(x^2-6x+3)$

Problem 5e: Research: When are polynomials used in “real-life”?

Week of July 6th: Literal Equations

Video Link: <https://www.khanacademy.org/math/algebra-home/alg-basic-eq-ineq/alg-old-school-equations/v/solving-for-a-variable>

Problem 1f: Solve $d = rt$ for t .

Problem 2f: Solve $A = \frac{bh}{2}$ for h .

Problem 3f: Solve $A = \frac{(b_1 + b_2)h}{2}$ for b_2 .

Problem 4f: Solve $m = \frac{y_2 - y_1}{x_2 - x_1}$ for y_1 .

Problem 5f: Solve $F = \frac{lt}{d}$ for l .

Week of July 13th: Solving systems of equations

Video Links:

Graphing: <https://www.youtube.com/watch?v=Pd4hwS8qHms>

Substitution: <https://www.youtube.com/watch?v=-mZZ6iPwQpE>

Elimination: <https://www.youtube.com/watch?v=0rAhyj4LYnk>

Use any method to solve each of the following problems

Problem 1g: What are the solutions to the system of equations
$$\begin{cases} y = x - 3 \\ 2x + y = 12 \end{cases}$$

Problem 2g: What are the solutions to the system of equations
$$\begin{cases} 5x - 3y = 2 \\ x = 2 - y \end{cases}$$

Problem 3g: What are the solutions to the system of equations
$$\begin{cases} x + y = 3 \\ x - 2y = -6 \end{cases}$$

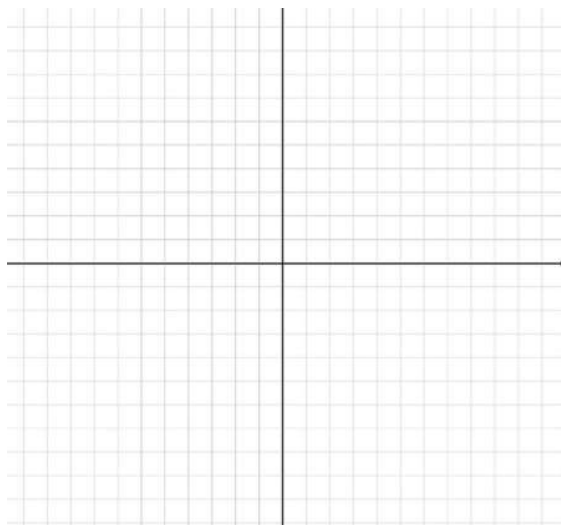
Problem 4g: What are the solutions to the system of equations
$$\begin{cases} 2y = x + 5 \\ 2x - 2y = 1 \end{cases}$$

Problem 5g: What are the solutions to the system of equations
$$\begin{cases} 4x + 3y = 6 \\ 3x - 2y = -4 \end{cases} ?$$

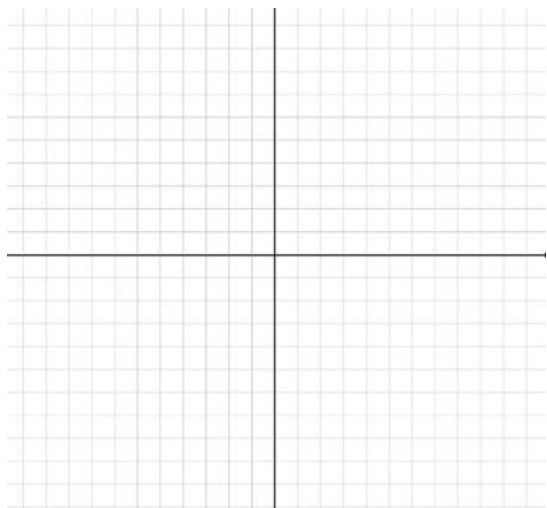
Week of July 20th: Transformations

Video Link: Research to determine the answers to the following questions

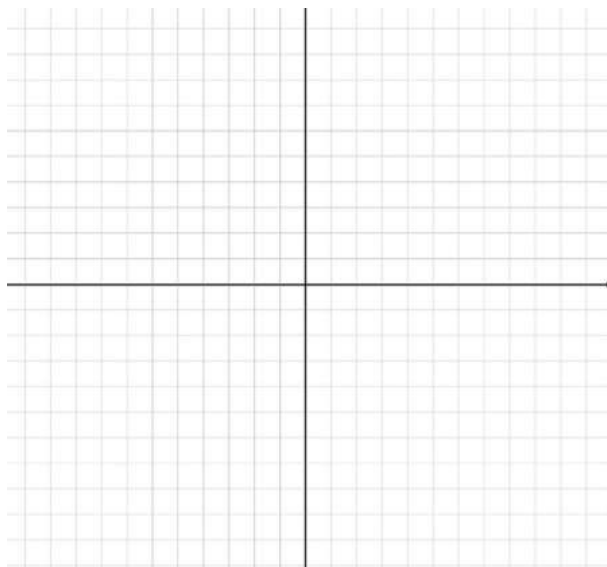
Problem 1h: What is a translation? Draw an example on the following coordinate plane



Problem 2h: What is a reflection? Draw an example on the following coordinate plane



Problem 3h: What is a rotation? Draw an example on the following coordinate plane



Problem 4h: What is a dilation? Draw an example on the following coordinate plane

