

MSLC 1148 Workshop: Refresh

Problem 1: Adding Fractions

Use Parts a and b to help with Parts c and d.

a) $\frac{1}{2} + \frac{1}{3} =$

b) $\frac{1}{2} - \frac{1}{3}$

c) $\frac{1}{x} + \frac{1}{x+1} =$

d) $-\frac{1}{x-7} + \frac{x}{x+3} =$

What is the big idea for solving these problems?

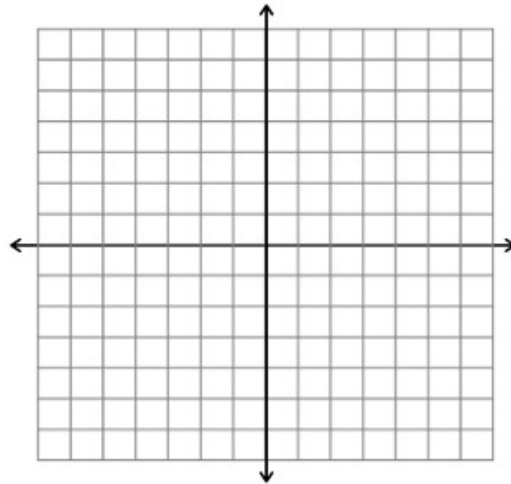
Problem 2: Graphing

Try each problem on your own, then consult a partner to debrief.

1. Plot the points:

- a. $(0,3)$
- b. $(4,0)$
- c. $(-2,0)$
- d. $(0,-1)$

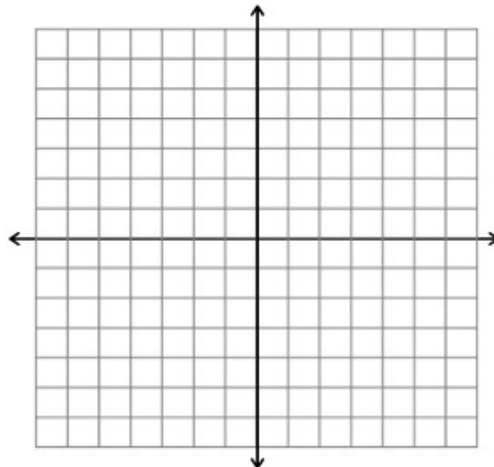
Which of these points lie on the x -axis? The y -axis?



2. Plot the points:

- a. $(-2,4)$
- b. $(4,-2)$
- c. $(0,2)$
- d. $(-1,1)$

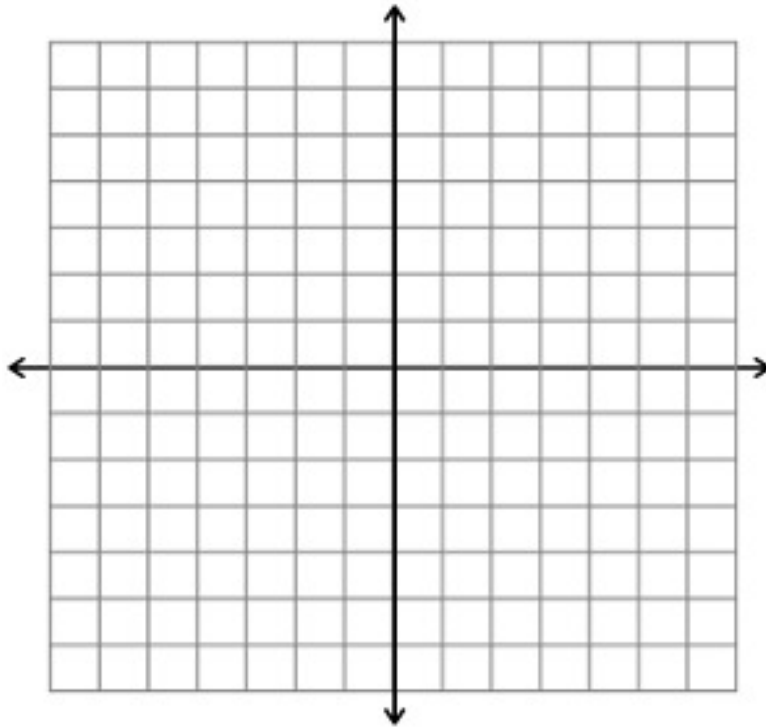
Which of these points lie on the curve $y = x^2$? Why?



3. Plot the following intervals:

a. On the x -axis: $(-\infty, 3]$, $[0, 2)$

b. On the y -axis: $[-2, -1]$, $(0, 1]$, $(4, \infty)$



Problem 3: Equal Expressions

After finishing, reflect: what tools did I need to solve this problem?

Choose all of the following which are equal to ab^3 .

a) $\frac{c+ab^3}{c}$

b) $\frac{ab}{b^{-2}}$

c) $\frac{1}{(ab^3)^{-1}}$

d) ab^{-3}

e) $\frac{cab^2}{cb^{-1}}$

f) $(ab^3 + 1)(ab^3 - 1)$

g) $\frac{cab^3-c}{c} + 1$

h) $abbb$

i) $2ab^3 - ab^3$

j) $\frac{b^3}{\frac{1}{a}}$

Problem 4: Mixtures

Write down variables along with what each variable means.

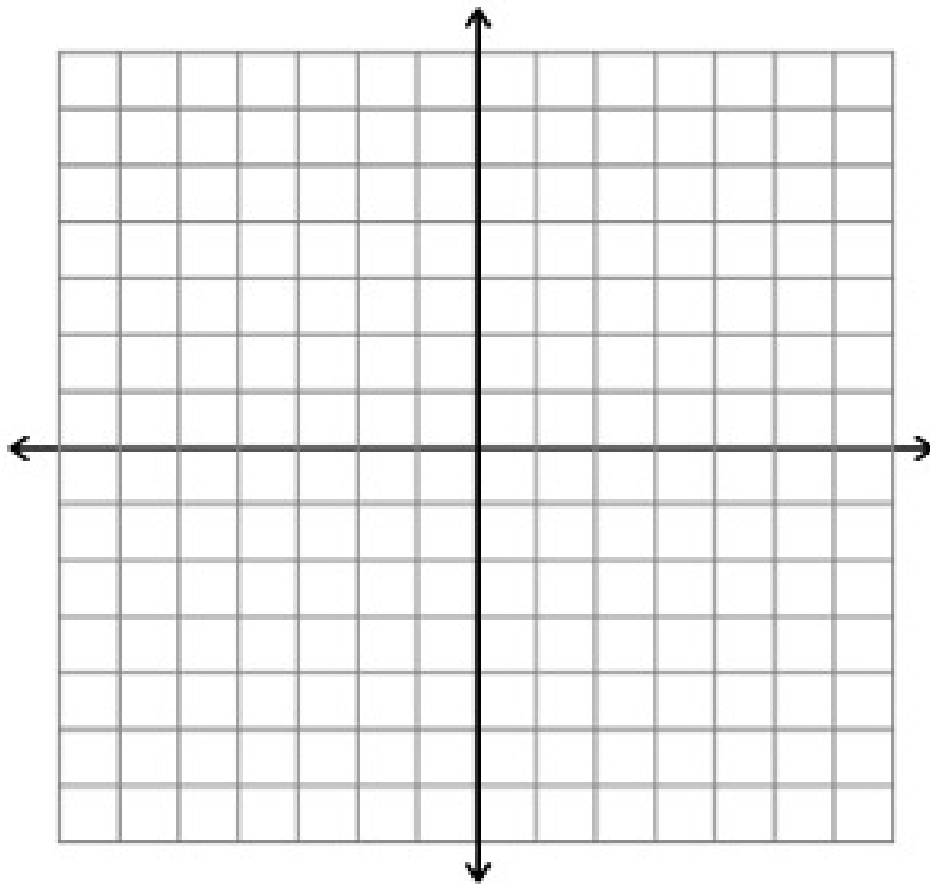
Say you want to make 2 pounds of granola with one quarter of the mixture being almonds and the other three quarters being oats. However, you only have plain oats and a granola mix with one third being almonds. How many pounds of the granola mix should you use?

Problem 5: Graphing from a Formula

If $y = 2x^2 - 1$, fill in the following table.

x	$y = 2x^2 - 1$
-1	
0	
1	
3	
5	
7	

Plot the graph of $y = 2x^2 - 1$.



In the above problems, is the underlying “data” the same? Which form of the “data” do you prefer to work with?

Problem 6: Inequalities

Circle the inequalities below which are **true**. Think carefully about the meaning of the inequality symbols!

- a. $6 < 7$
- b. $7 > 6$
- c. $6 \leq 7$
- d. $7 \geq 6$
- e. $6 \leq 6$
- f. $6 \geq 6$

If $x < y$, circle the inequalities below which **must be true**. Try plugging in different values for x and y to check your work!

- a. $y + 10 > x + 10$
- b. $x < 3x$
- c. $2x < 2y$
- d. $-5x < -5y$
- e. $x - 4 < y - 4$

Were any of the above results surprising?