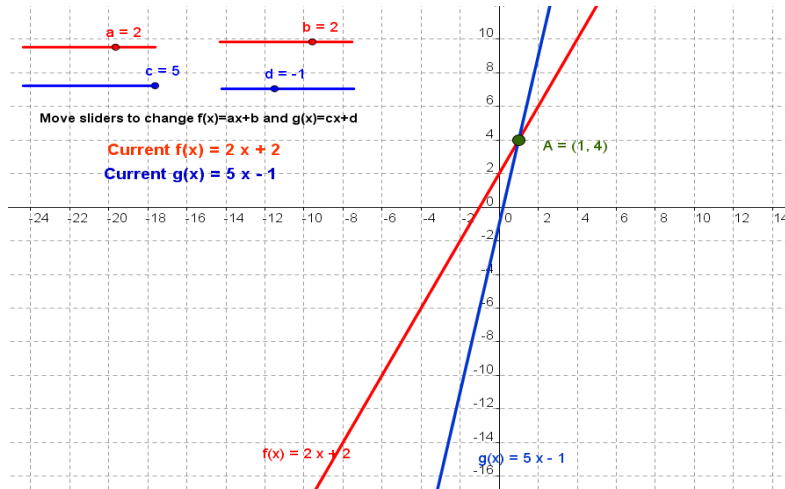


Student Activity: To investigate equations of the form $ax + b = cx + d$

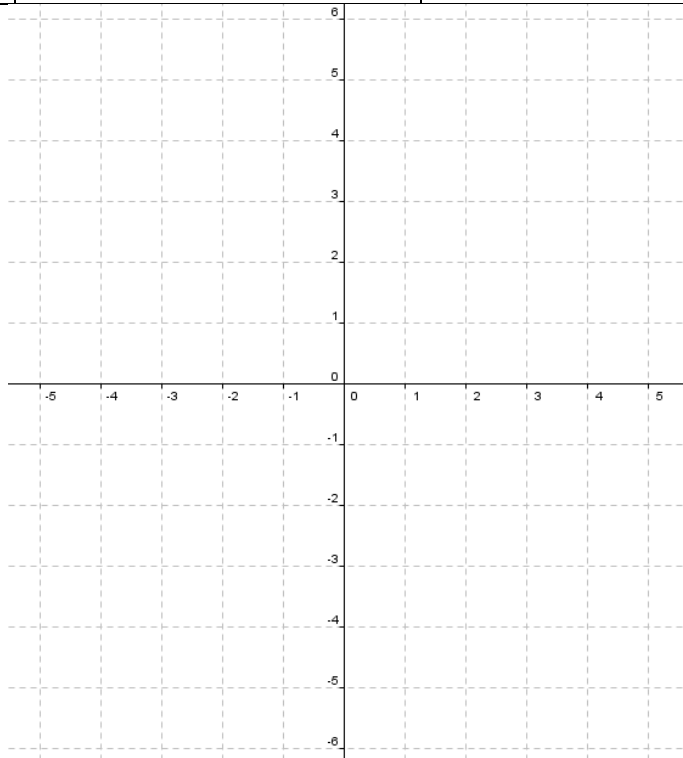
use in connection with the interactive file, 'Simultaneous Equations of First Degree', on the Student's CD.



1.

- a. Complete the following table and on the same axes draw the graphs of the following functions $f(x) = 3x + 1$ and $g(x) = 2x + 1$.

x	$f(x) = 3x + 1$	$g(x) = 2x + 1$
-3		
-2		
-1		
0		
1		
2		



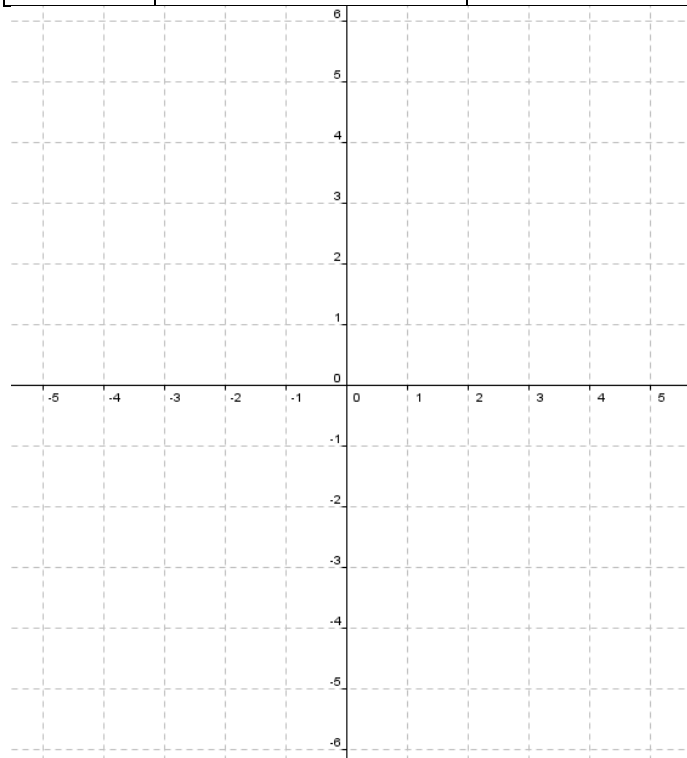
- b. Show on the graph and name the point(s) where $f(x) = 3x+1$ and $g(x) = 2x+1$ intersect. What information does this give us?

- c. How many points of intersection do the graphs of $f(x)$ and $g(x)$ have? Could they intersect at other points not visible on your graph? Explain your answer.

2.

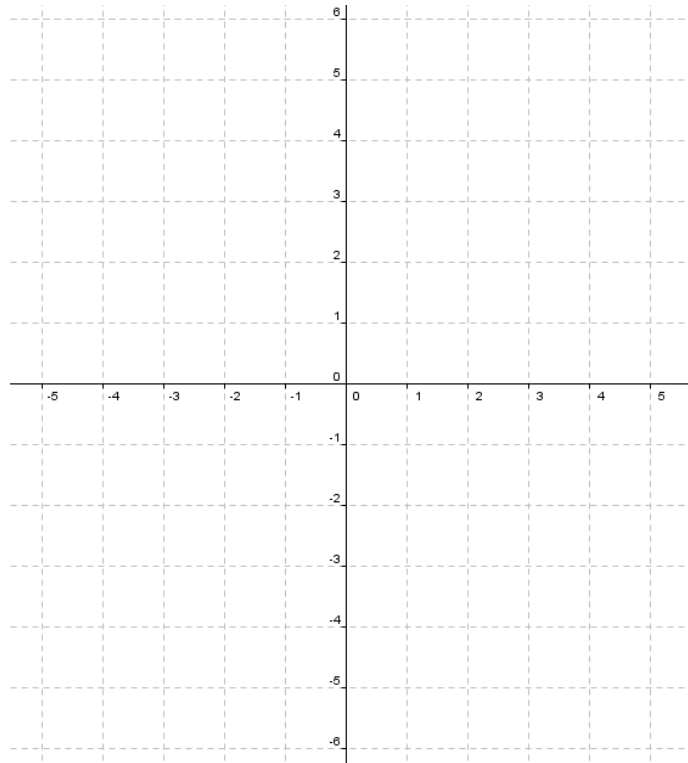
- a. Complete the following table and on the same axes draw the graphs of the following functions $f(x) = 1x + 4$ and $g(x) = 2x + 3$.

x	$f(x) = 1x + 4$	$g(x) = 2x + 3$
-2		
-1		
0		
1		
2		

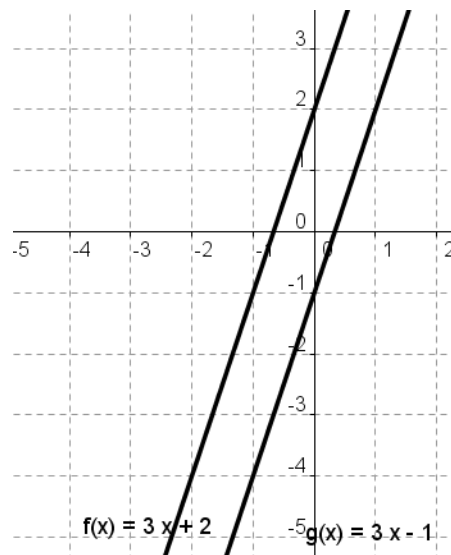


- b. Show on the graph and name the point(s) where $f(x) = 1x + 4$ and $g(x) = 2x+3$ intersect. What information does this give us? Could they intersect at other points not visible on your graph? Explain your answer.

3. Graphically find the solution to the equation $f(x) = g(x)$, where $f(x) = 2x+2$ and $g(x) = x+3$.



4. Where do the following functions intersect? Give a reason for your answer.



5. List two other functions that will never intersect with the function $f(x) = 4x+2$.

6. Will the function $f(x) = 2x+1$ ever intersect with the function $g(x) = 2x+8$? Explain.

7. If you know two functions never intersect and the equation of one of the equations is $f(x) = 5x+2$ and the other function cuts the x axis at 3, find its equation.

8. Will the functions $f(x) = 2x+4$ and the function $g(x) = -2x+1$ ever intersect each other? Explain your answer.

9. Solve the following either by algebra or graphically and then check using the interactive file:

a. $2x+5 = 4x+1$

b. $3x+2 = 5x$

c. $-4x+4 = 5x-5$

d. $3x+2 = 8$
