Student Activity on Lines Parallel to the Axes

Use in connection with the interactive file “Lines Parallel to the Axes” on the Student’s CD.

To explore the properties of lines parallel to the axes

The slider called “Step” is used to change the information on the screen.

To start set the slider to “Step = 1”

1. What is common to all the points labelled on the screen? __________________________
   _____________________________________________________________________________

2. Write down another point on this line? __________________________

3. Check your answer by moving the red dot onto the point you have just written down.

4. Move the green dots that have just appeared. What do you notice about the coordinates of the dots? __________________________
   _____________________________________________________________________________

5. What line is this green line parallel to? __________________________

6. Move the blue dot into the circle that you think is the equation of this line.
7. Move the “Step” slider to 2. What is common to all the points shown on the screen?

8. Write down another point on this line?

9. Check your answer by moving the red dot onto the point you have just written down.

10. Move the green dots that have just appeared. What can you notice about the coordinates of the dots?

11. What is this line parallel to?

12. Move the blue dot into the circle that you think is the equation of this line.

13. Move the “Step” slider to 3. Take a look at the equation of the line and the points on the line. What do you notice?

14. Drag the line downwards so that the equation is y=1. Write down all the points that are shown on the line.

15. Drag the line downwards so that the equation is y=0. Write down all the points that are shown on the line.

16. Write down another name for this line.

17. The lines y=3, y=1, y=0, y=-3 are all...

18. Move the “Step” slider to 4. Take a look at the equation of the line and the points on the line. What do you notice?
19. Drag the line to the left so that the equation is $x=1$. Write down all the points that are shown on the line.__________________________________________________________________________

20. Drag the line downwards so that the equation is $x=0$. Write down all the points that are shown on the line.__________________________________________________________________________

21. Write down another name for this line._________________________________________________________

22. The lines $x=3$, $x=1$, $x=0$, $x=-3$ are all...__________________________________________________________________________

23. Write down the equation of the line that passes through $(2,4)$ and $(2,-7)$.__________

24. Write down the equation of the line that passes through $(3,5)$ and $(-2,5)$.__________