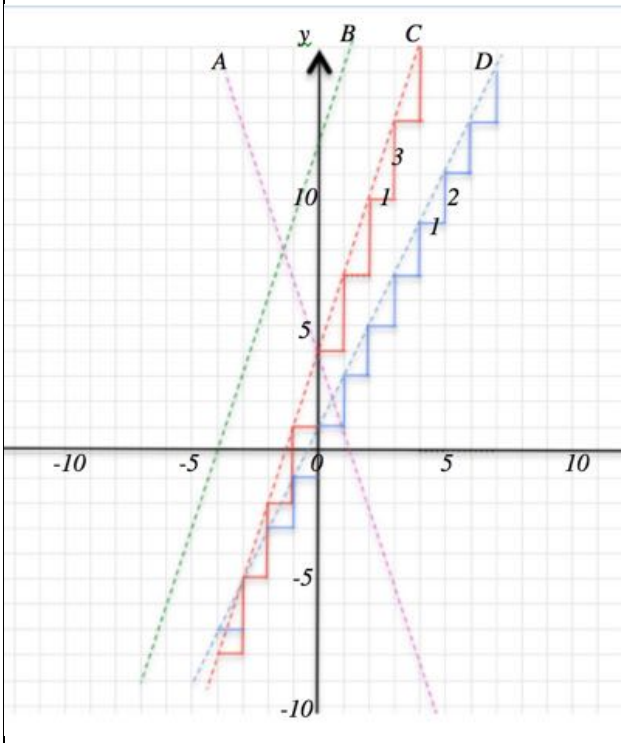
STEPS



Continue these sequences for the next 3 terms and continue the sequences backwards to the previous 3 terms:

7, 10, 13, 16, 19, ...

15, 18, 21, 24, 27, ...

1, -2, -5, -8, -11, ...

The first 2 sequences come from a multiplication table shifted up. Which multiplication table is it? What do you notice about the third sequence? How do the sequences relate to the red steps in the diagram?

How do these sequences relate to the lines A, B and C in the diagram? Which sequence relates to which line?

How does the sequence 3, 5, 7, 9, 11... relate to a multiplication table and to the blue steps in the diagram? How does it relate to the line D in the diagram?

Imagine you are climbing the red steps from the point (-3 , -5) to the point (3, 13). Now imagine you climb the same number of the blue steps from the point (-3, -5) to the point (3, 7). Which is the steeper climb? Why? How could you measure the steepness of the climb?

Match the following equations to the lines in the diagram.

E_1 : $y = 3x + 12$
E_2 : $y = 2x + 1$
E_3 : $y = -3x + 4$
E_4 : $y = 3x + 4$

HELP

Learners may find that writing down the coordinates of points L, M, N, P, Q, R and S and then of the points T, U, V and W helps them to do this question.

Learners might work in groups and take responsibility for ensuring that everyone in the group understands before the group moves on to the next stage. In that way everyone can develop the skills of maintaining good interpersonal relations while working co-operatively.

NEXT

First draw the graphs of the lines:

through (0, 7) with gradient -2 and

through (0, -5) with gradient 1 and find their equation.

Then draw 3 more straight lines with the same axes and record the intercepts, gradients and equations.