

Find the Rule

Annotation

James shows relational thinking, in forming an equation that describes the given parabola. James recognises key features of a parabola and notes that this graph shows a standard parabola that has been vertically translated.

Problem: Find the Rule

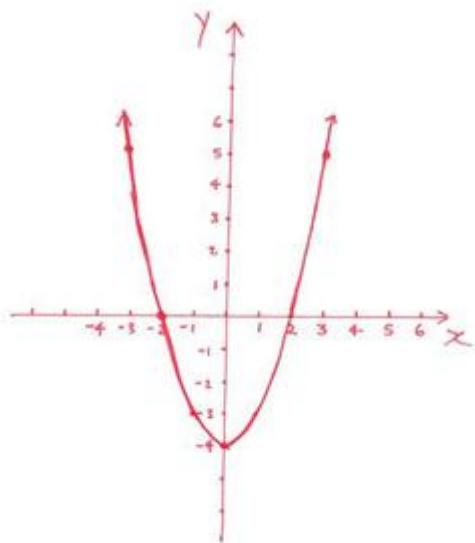
The teacher poses this problem:

Find the relationship between the following coordinates.

x -3 -2 -1 0 1 2 3

y 5 0 -3 -4 -3 0 5

Student Response



James: I know this is a parabola, so the rule must be x squared something.

Teacher: How do you know it's a parabola?

James: There's a mirror line and a bottom bit, the vertex. Oh, and the shape is right from the vertex. I can go across 1, up 1 and across 2, up 4 from the vertex. Yeah, across 3, up 9 works too. But it's not all sitting on (0,0). It's been moved down....down four.

Teacher: So can you tell me the rule?

James: x squared minus 4.

Teacher: Can you give me the equation of this parabola?

James: (writes) $y = x^2 - 4$