

F.LE Do two points always determine an exponential function?

Task

An exponential function is a function of the form $f(x) = ab^x$ where a is a real number and b is a positive real number.

- a. Suppose $P = (0, 5)$ and $Q = (3, -3)$. For which real numbers a and b does the graph of the exponential function $f(x) = ab^x$ contain P ? Explain. Do any of these graphs contain Q ? Explain.
- b. Suppose $R = (2, 0)$. If $f(x) = a \cdot b^x$ is an exponential function whose graph contains R what can you conclude about a ? What is the graph of $f(x)$ in this case?



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