
Exercise 2.5 Turn symbols into words

1. The inverse of a function at zero.
2. The reciprocal of the value of a function at zero.
3. The inverse of the composition of a function with another function.
4. The image of positive real numbers under a function.
5. The intersection of the image of A under f and the image of B under f .
6. The intersection of the integer set(\mathbb{Z}) with its inverse image under a function.
7. The intersection of the rational numbers with the image of real numbers under a function.

Exercise 2.2 Explain Clearly and Plainly.

1. Divide your number by integer numbers less than it's square root, if it isn't dividable by any of them then it's a prime number.
2. Subtract square numbers such as 1,4,9,... from your number, if the result is a square number then your number is sum of two square numbers.
3. All three parameters of lines must be equal at the point of intersection, this gives us three equations with two unknowns (t, t') , the result of these three equations must be compatible with each other in order to have an intersection.
4. The perpendicular bisectors of two chords meet at the center of the circle. so we find the line equations of two chords, then we find their perpendicular bisectors equation, their intersection point is the center of the circle.
5. If the coefficient of the term x^2 is positive(negative) then the function will definitely assume positive(negative) values somewhere on the graph. all we need to do is whether it assumes negative(positive) values where it's derivative is zero, so you have to check the sign of $f(\frac{-b}{2a})$.