

## Exercise 1

In Exercises 1–6, find the domain and range of each function.

$$f(x) = 1 + x^2$$

### Solution

$f(x)$  is a polynomial, so any value can be plugged in for  $x$ .

$$\text{Domain: } \{x \mid -\infty < x < \infty\}$$

The  $x^2$  term can be either zero or higher than that, so the lowest value of  $f$  is 1 and the highest value of  $f$  is  $\infty$ .

$$\text{Range: } \{y \mid 1 \leq y < \infty\}$$

