

1. Give the domain, range, and zeros of each function.

a) $f(x) = \sqrt{x^2 - 9}$

domain:

range:

zeros:

b) $f(x) = |x| + 2$

domain:

range:

zeros:

c) $f(x) = \sqrt{4 - x}$

domain:

range:

zeros:

2. Describe the graph of $f(x) = \frac{x^2 - 4}{x + 2}$. State the range and the zeros of the function.

3. Let $f(x) = x - 1$ and $g(x) = x^2 + 2x - 3$. Find each of the following:

a) $(f + g)(x)$

b) $(f - g)(x)$

c) $(f \cdot g)(x)$

d) $\left(\frac{f}{g}\right)(x)$

e) $(f(g(-2)))$

f) $(f \circ g)(x)$

g) $g(f(4))$

h) $(g \circ f)(x)$

i) $(g \circ f)(1)$

