

Quiz: Exponents and radicals

Work without a calculator. Answer in the space provided.

Simplify, leaving no negative or fractional exponents.

1. $7a^{-5}b^2 \times 2a^3b^{-2}$

2. $\sqrt[3]{8x^9y}$

3. $a^{\frac{2}{3}} \times \left(\frac{16a^{-2}}{b^4}\right)^{\frac{1}{2}}$

4. $(x^6y^4)^{\frac{1}{3}} \div x^{-2}y$

5. State whether this relation is a function. Justify your answer. $\{(3, 4), (5, 6), (3, -4), (6, -6)\}$

6. Graph the function $f(x) = (x + 1)^2 - 4$ over the domain $x \geq -1$ on the grid below.

(a) Label the y -intercept as an ordered pair.

(b) Label the point representing the solution to the equation $f(x) = 0$ as an ordered pair.

(c) Find the inverse function of $f(x)$.

(d) Graph the inverse function, $f^{-1}(x)$.

