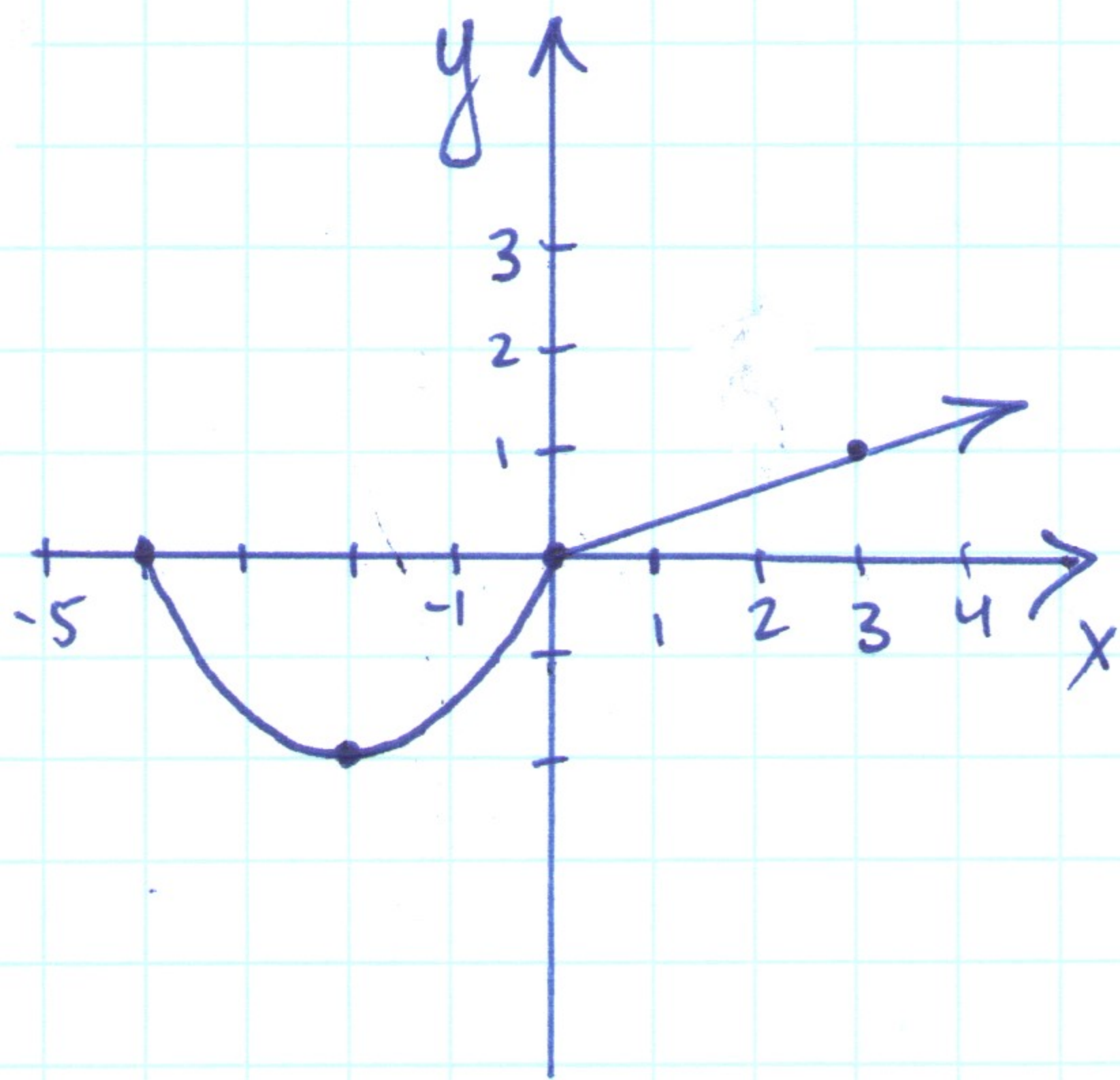1)   use the graph of $f(x)$ to graph each function $g(x)$

(a) $g(x) = f(x+2) - 3$

(b) $g(x) = -f(2x)$

(c) $g(x) = \frac{1}{2} f(x-1)$

(d) $g(x) = -f(-x) + 2$

2)   use the graph of $f(x) = \sqrt[3]{x}$ to graph

(a) $g(x) = \sqrt[3]{x+2} - 1$

(b) $h(x) = -\sqrt[3]{2x} + 3$

(c) $r(x) = -2\sqrt[3]{-x}$

3) find the domain of each function

(a) $f(x) = 7x - 10$

(b) $f(x) = x^2 - 10x$

(c) $h(x) = \sqrt{10-x}$

(d) $g(x) = \dfrac{1}{\sqrt{x-5}}$

(e) $r(x) = \sqrt{x-5} \cdot \sqrt{3-x}$

(f) $t(x) = \dfrac{x+5}{x^2 + 4x - 21}$

4) find $f+g$, $f-g$, $g-f$, fg, and $\dfrac{f}{g}$. determine the domain of each function.

(a) $f(x) = 3x - 2$ $g(x) = 5 - x$

(b) $f(x) = 2x^2 - 3x + 1$ $g(x) = x - 1$

(c) $f(x) = \sqrt{x+7}$ $g(x) = \sqrt{x-5}$

5) for given functions $f(x)$ and $g(x)$, find

    a. $(f \circ g)(x)$ and its domain

    b. $(g \circ f)(x)$ and its domain

    c. $(f \circ g)(1)$

    d. $(g \circ f)(3)$

(1) $f(x) = x^2 + 3$ $g(x) = 3x - 1$

(2) $f(x) = \sqrt{x}$ $g(x) = x + 2$

(3) $f(x) = \dfrac{x-1}{x+2}$ $g(x) = \dfrac{1}{x}$

6) determine if the given pair of functions are inverses of each other.

(a) $f(x) = \dfrac{7}{5}x + \dfrac{1}{2}$ $g(x) = \dfrac{5}{7}x - 2$

(b) $f(x) = 10 - 7x$ $g(x) = \dfrac{10 - x}{7}$

(c) $f(x) = \dfrac{\sqrt[3]{x-1}}{2}$ $g(x) = 8x^3 + 1$

7) For the given one-to-one functions, find their inverse functions

(a) $f(x) = 3x + 5$

(b) $f(x) = \sqrt[3]{x-2}$

(c) $f(x) = \dfrac{7}{x} + 2$

8) which graphs represent functions that have inverse functions?

(a)

(b)

(c)

(d)