

Quiz 4
(Section 1.3)
Do any three problems.

Name: _____

1. Given the graph of a function $f(x)$:

(a) determine the *domain* and the *range* of function f .

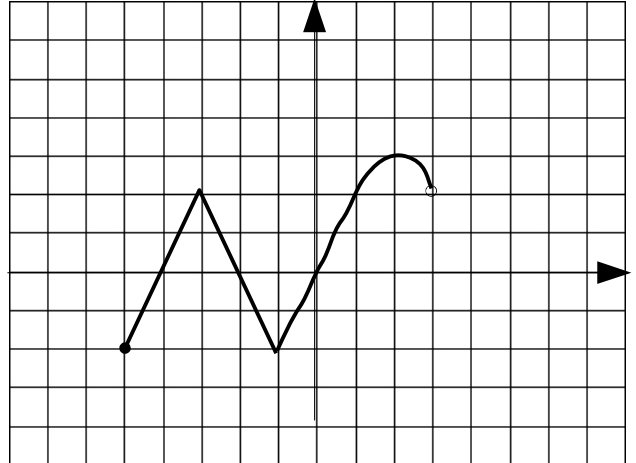
Domain:

Range:

(b) find relative *maxima* and *minima* of $f(x)$.

Maxima:

Minimum:



(c) State the intervals on which the given *function is increasing*:

(d) State the intervals on which the given *function is decreasing*:

2. Determine whether the given *function is odd, even, constant or neither*.

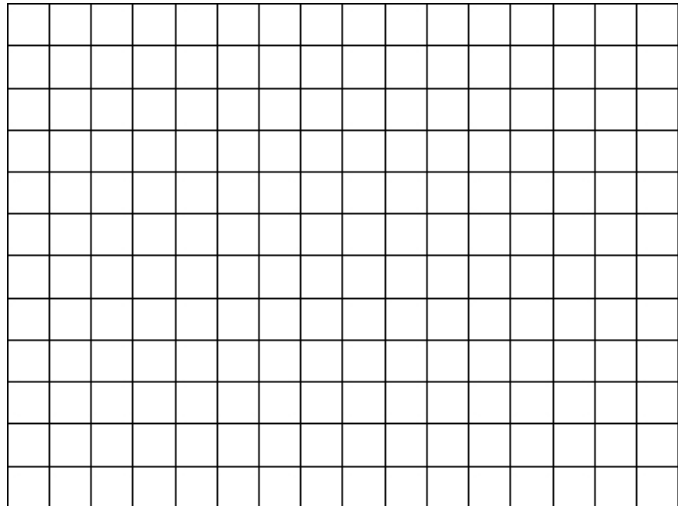
(a) $g(x) = x^5$

(b) $h(x) = x^4$

(c) $t(x) = x^3 + x^2$

3. Graph the *piecewise function* defined by

$$f(x) = \begin{cases} 3x - 2 & \text{if } x > -1 \\ 2 & \text{if } x \leq -1 \end{cases}$$



4. Find and simplify the difference quotient $\frac{g(x+h)-g(x)}{h}$ for the function $g(x)$, when $h \neq 0$

$$g(x) = 2x^2 - 5x$$