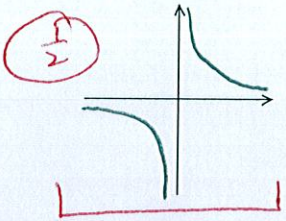
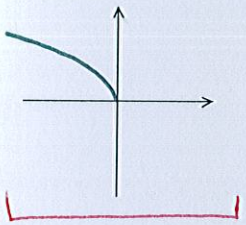
[] Sketch the following graphs.

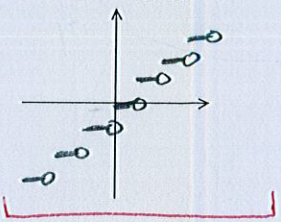
$f(x) = \frac{1}{x}$



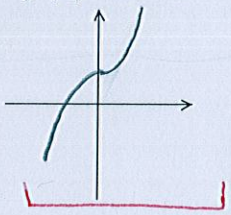
$f(x) = \sqrt{-x}$



$f(x) = [[x]]$



$f(x) = x^3 + 2$



[] Fill in the blanks.

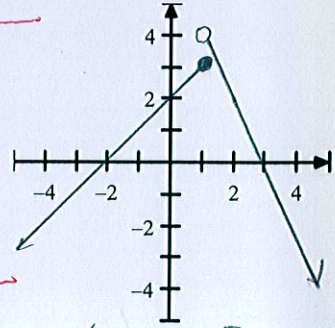
[a] An odd function is symmetric over THE ORIGIN.

[b] If the point $(-2, -3)$ is on the graph of an even function, then the point (2, -3) must also be on the graph.

[c] The point $(2,$ -1 $)$ is on the graph of $n(x) = 7 - x^3$.

[] Sketch the graph of $g(x) = \begin{cases} x+2, & x \le 1 \\ 6-2x, & x > 1 \end{cases}$.

ANSWER: **DRAWN BELOW**



[] Find the domain of $h(x) = \sqrt{8-2x}$ algebraically.
Write your answer in interval notation.

ANSWER: $(-\infty, 4]$

$8 - 2x \ge 0$

$-2x \ge -8$

$x \le 4$

ADDITIONAL QUESTIONS ON THE OTHER SIDE ➡

[] If $k(x) = [[2x+3]]$, find $k(-4.1)$. **ANSWER:** -6

$[2(-4.1)+3]$
$= [-8.2+3]$
$= [-5.2]$
$= -6$

[] Find the average rate of change of $p(x) = \frac{24}{x}$ from $x_1 = -6$ to $x_2 = 3$. **ANSWER:** $\frac{4}{3}$ (1/2)

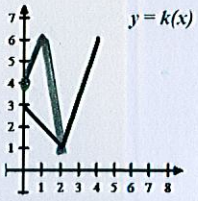
$\frac{p(3)-p(-6)}{3--6}$
$= \frac{8--4}{3--6}$
$= \frac{12}{9} = \frac{4}{3}$

[] Is $m(x) = -x^5 + 7x^3 - 3$ an odd function ? Justify your answer algebraically. **ANSWER:** NO (1/2)
(YES OR NO)

$m(-x) = -(-x)^5 + 7(-x)^3 - 3$
$= x^5 - 7x^3 - 3$
$-m(x) = -(-x^5 + 7x^3 - 3)$
$= x^5 - 7x^3 + 3$

$m(-x) \neq -m(x)$

The following questions all refer to the graph of $k(x)$ on the right.



(2)

[] Find the range of k. Write your answer in interval notation. **ANSWER:** [1, 6]

[] Find all intervals over which k is decreasing. Write your answer in interval notation. **ANSWER:** [0, 2]

[] Sketch the graph of $y = -k(2x) + 7$ on the axes above. **ANSWER:** **DRAWN ABOVE**

(0,3) —REFLECT OVER X-AXIS→ (0,-3) —SHIFT UP 7→ (0,4) —COMPRESS INTO y-AXIS FACTOR $\frac{1}{2}$→ (0,4)
(2,1) ⟶ (2,-1) ⟶ (2,6) ⟶ (1,6)
(4,6) ⟶ (4,-6) ⟶ (4,1) ⟶ (2,1)