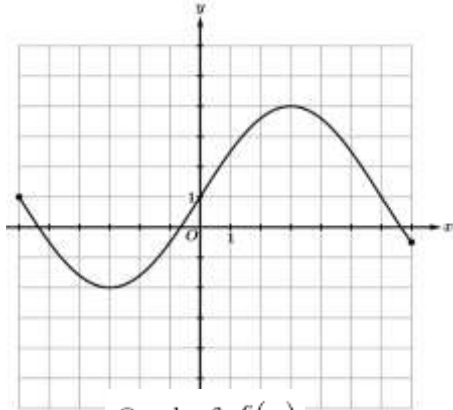


Directions: For each of the following, find the intervals where the given has the following characteristics.

1.

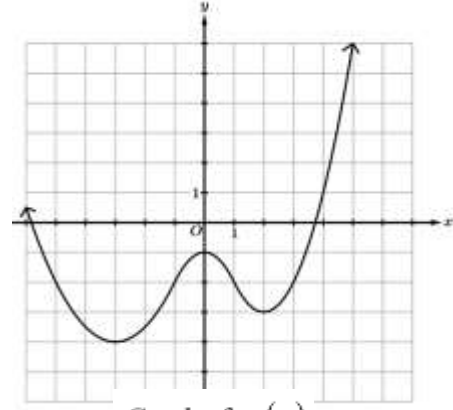


Graph of $f(x)$

1a. On what open intervals is $f(x)$ increasing?

1b. On what open intervals is $f(x)$ concave down?

2.

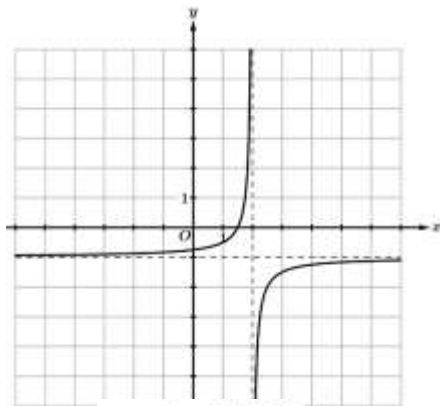


Graph of $g(x)$

2a. On what open intervals is $g(x)$ decreasing?

2b. On what open intervals is $g(x)$ concave up?

3.

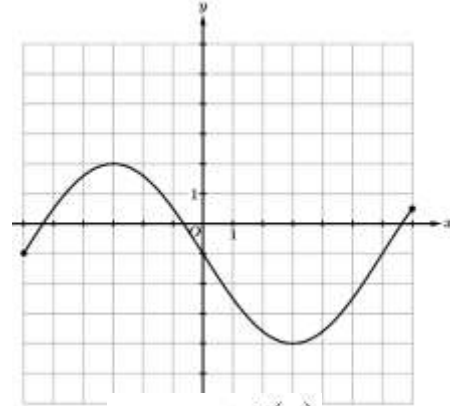


Graph of $h(x)$

3a. For $-5 \leq x \leq 7$, on what intervals is $h(x)$ increasing?

3b. For $-5 \leq x \leq 7$, on what intervals is $h(x)$ concave up?

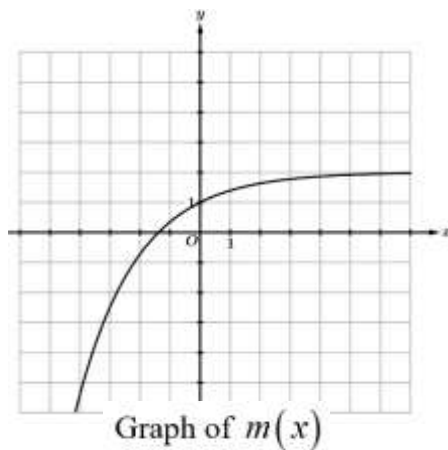
4.



Graph of $k(x)$

4a. On what open intervals is $k(x)$ both increasing and concave down?

4b. On what open intervals is $k(x)$ both decreasing and concave up?

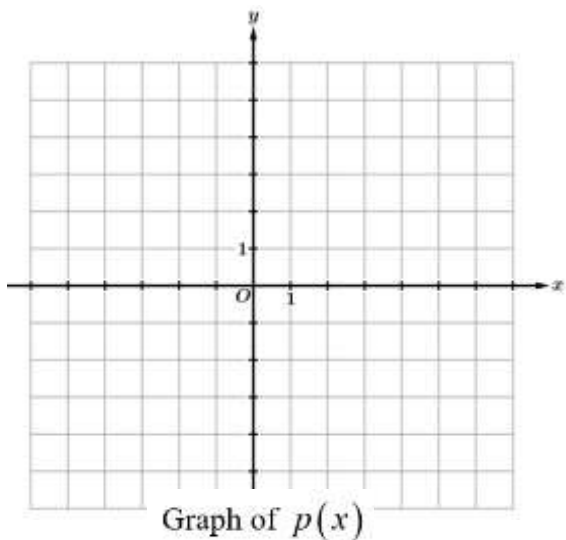


5. The graph of $m(x)$ is shown above. Which of the following best describes the graph of $m(x)$?

- A) increasing and concave up
- B) increasing and concave down
- C) decreasing and concave up
- D) decreasing and concave down

Directions: For problems 6 and 7, sketch a function on the axes provided with the given properties.

6. $p(x)$ is increasing on the interval $(-5, 1]$ and decreasing on the interval $[1, \infty)$.
 $p(x)$ is concave up on the interval $(-5, -2)$ and concave down on the interval $(-2, \infty)$.



7. $q(x)$ is decreasing on the interval $(-\infty, 3]$ and increasing on the interval $[3, \infty)$.
 $q(x)$ is concave up on the interval $(-5, 0)$ and concave down on the interval $(0, \infty)$.

