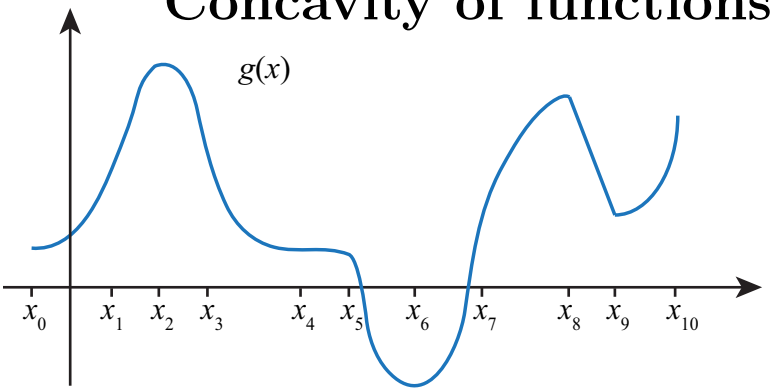
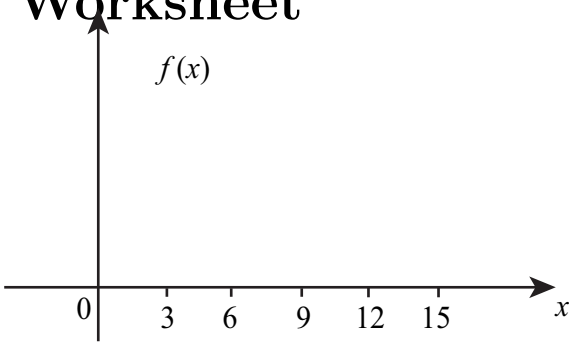
Concavity of functions Worksheet





1. Find the interval(s) where $g(x)$ is concave up.

2. Find the interval(s) where $g(x)$ is concave down.

3. Find the interval(s) where $g(x)$ is decreasing & concave up.

4. Find the interval(s) where $g(x)$ is increasing & concave down.

5. Find the interval(s) where $g(x)$ is neither concave up nor down.

6. Find the interval(s) where $u(x) = 5x^2 - 6x$ is concave up.

7. Find the interval(s) where $v(y) = \ln(y^2)$ is concave up.

8. Find the interval(s) where $f(x) = e^{1-x^2}$ is concave down.

9. Find the interval(s) where $h(x) = 6x^3 - 2x^4$ is concave up.

10. Sketch $f(x)$ satisfying: **(i)** $f''(x) > 0$ for $6 \leq x \leq 9$; $f''(x) < 0$ for $9 \leq x \leq 12$ and $x \leq 3$; $f''(x) = 0$ for $x > 12$. **(ii)** $f'(x) > 0$ for $x \leq 6$ & $x \geq 12$; $f'(x) < 0$ for $6 < x < 12$.
