Question: Using the first derivative test, find the critical values and intervals where the function is increasing.

$y = x^2 - 6x + 2$

- a) $x = 3, (3, \infty)$
- b) $x = 3, (-\infty, 3)$
- c) $x = 0$ and $3, (3, \infty)$
- d) not given

Multiple Choice

Question: Using the first derivative test, find the critical values and intervals where the function is increasing.

$y = x^3 - 27x + 2$

- a) $x = 27, (-27, 27)$
- b) $x = 3, (-3, 3)$
- c) $x = 3$ and $-3, (-3, 3)$
- d) $x = 3$ and $-3, (-\infty, -3), (3, \infty)$

Multiple Choice

Question: If the demand function is given by p = - 0.4x+24, find the value at which the revenue function is a maximum.

- a) $x = 60$
- b) $x = 6$
- c) $x = 30$
- d) not given

Question: Find the value at which the revenue is maximized. If the revenue function is:

$R(x) = -x^3 + 36x$

- a) $x = 1$
- b) $x = 2\sqrt{3}$
- c) $x = 12$
- d) not given

Question 5 **Multiple Choice**

Question: Find where the marginal cost is at a minimum, where x is output in thousands of dollars and x is between 0 and 50. If the cost function is:

$C(x) = 0.4490x - 0.01563x^2 + 0.000185x^3$

- a) $x = 28.162$
- b) $x = 0.0088$