A: Find the absolute extreme values of each function on the interval given.

#1) $f(x) = x^3 - 6x^2 + 9$ on [-3, 3]

#2) $f(x) = x(x - 10)$ on [-10, 10]

#3) $f(x) = \sqrt[3]{x^2}$ on [-2, 10]

#4) $f(x) = \frac{1}{x^2+4}$ on [-4, 4]

Jimmy Crack Corn

#5) Jimmy Crack Corn finds that it costs $22 to crack each corn, and fixed costs are $38 per day. The price function is $p(x) = 40 - 3x$, where p is the price (in dollars) at which exactly x cracks will be sold. Find the quantity Jimmy Crack Corn should produce and the price he should charge to maximize profit. Also find the maximum profit.

Lady McButter Pants

#6) Lady McButter Pants finds that it costs $200 to manufacture each pair of butter paints, and fixed costs are $1500 per day. The price function is $p(x) = 380 - 9x + 13000x^{-1}$, where p is the price (in dollars) at which exactly x pants will be sold. Find the quantity Lady McButter Pants should produce and the price she should charge to maximize profit. Also find the maximum profit.

Sentence Answer:

Sentence Answer:

Floppy Inc

#7) Floppy Inc finds that it costs $85 to manufacture each pair of Flippies. The price function is $p(x) = 481 - 9x + 30x^{-1}$, where p is the price (in dollars) at which exactly x Flippies will be sold. Find the quantity Floppy Inc should produce and the price it should charge to maximize profit. Also find the maximum profit.

Brick House Company

#8) The Brick House Company finds that it costs $7 to manufacture each toilet, and fixed costs are $20,000 per day. The price function is $p(x) = 307 - 2x + 40{,}000x^{-1}$, where p is the price (in dollars) at which exactly x toilets will be sold. Find the quantity the Brick House Company should produce and the price it should charge to maximize profit. Also find the maximum profit.

Sentence Answer:

Sentence Answer: