

12. Suppose a firm has the following production function: $Q = 2KL$. The marginal product of capital for this production function is $2L$, and the marginal product of labor is $2K$. If capital rents for \$100 per unit per day, labor can be hired for \$200 per unit per day, and the firm is minimizing costs,
- What is the total cost of producing q units of output?
 - What is the average cost of producing q units of output?
 - What is the marginal cost of producing q units of output?
 - Re-solve for part (c) using calculus.
 - Use calculus to show whether marginal cost increases or decreases with quantity.
 - Minimize average total cost using calculus.