103. Assuming a competitive resource market, a firm is hiring resources in the profit-maximizing amounts when the:   
A. firm's total outlay on resources is minimized.  
B. marginal revenue product of each resource is equal to its price.  
C. price of each resource employed is the same.  
D. marginal revenue product of the last unit of each resource hired is the same.

104. Assume that an appliance manufacturer is employing variable resources X and Y in such amounts that the MRPs of the last units of X and Y employed are $100 and $60 respectively. Resource X can be hired at $50 per unit and resource Y at $20 per unit. The firm:   
A. should hire more of both X and Y.  
B. should hire more of Y and less of X.  
C. is producing with the least-costly combination of X and Y, but could increase its profits by employing more of X and less of Y.  
D. is using the least-cost combination of X and Y, but could increase its profits by employing less of both X and Y.

105. A firm is hiring resources X, Y, and Z in the profit-maximizing amounts when:   
A. MRPx/Px equals MRPy/Py equals MRPz/Pz equals 1.  
B. the sum of the MRPs of the three resources is at a minimum.  
C. the marginal revenue productivity of all three resources is the same.  
D. the marginal revenue product of the last dollar spent on each of the three resources is the same.

 Answer the question on the basis of the following marginal product data for resources *a* and *b*. The output of these independent resources sells in a purely competitive market at $1 per unit.  
 

106. Refer to the above data. Assuming the prices of resources *a* and *b* are $5 and $8 respectively, what is the least costly combination of resources for the firm to employ in producing 192 units of output?   
A. 2 of *a* and 6 of *b*  
B. 6 of *a* and 2 of *b*  
C. 4 of *a* and 3 of *b*  
D. 3 of *a* and 4 of *b*

107. Refer to the above data. Assuming the prices of resources *a* and *b* are $5 and $8 respectively, what is the profit-maximizing combination of resources?   
A. 7 of *a* and 7 of *b*  
B. 6 of *a* and 4 of *b*  
C. 5 of *a* and 7 of *b*  
D. 4 of *a* and 4 of *b*

108. Refer to the above data. Assuming the prices of resources *a* and *b* are $5 and $8 respectively, when the firm hires the profit-maximizing combination of resources, its economic profit will be:   
A. $170.  
B. $76.  
C. $145.  
D. $138.

109. Refer to the above data. Assume now that the prices of *a* and *b* are $15 and $20 respectively. To maximize profits what combination of *a* and *b* should the employer hire?   
A. 3 of *a* and 5 of *b*  
B. 5 of *a* and 7 of *b*  
C. 7 of *a* and 7 of *b*  
D. 6 of *a* and 2 of *b*

110. The equation MP*L*/*PL* = MP*C*/*PC*:   
A. designates the MR = MC level of output.  
B. assumes imperfect competition in the hiring of labor and capital.  
C. is a sufficient condition for the maximization of profits.  
D. is a necessary, but not sufficient, condition for the maximization of profits.

111. Assume a firm purchases resources *a* and *b* under purely competitive conditions and combines these resources to produce X. Product X is sold in a purely competitive market. The MP of *a* and *b* are 6 and 3 respectively and the prices of *a* and *b* are $12 and $6 respectively. If equilibrium exists, the price of X will be:   
A. $1.  
B. $.50.  
C. $2.  
D. $5.