**Markets for the Factors of Production: Labor Markets**

**Questions and Problems**

**Questions:**

1. Given that the demand for a factor of production is a derived demand, briefly explain how an increase in the demand for automobiles would affect the price of tires (a factor of production).
2. If in Ohio certified physician assistants (PAs) are allowed to assume more of the responsibilities of physicians, what would be the impact on the market demand curve and equilibrium wage for PAs?
3. Briefly, explain whether you agree or disagree with the following: According to economic theory, a firm should employ labor up to a point where the marginal revenue product equals the marginal cost of labor; therefore, there should be the same employment and wage levels regardless of the competitive structure of labor markets.
4. Assume that a firm is a perfect competitor in the labor market. If it is currently employing labor where the marginal product is 8 units, the wage rate is $30, and the output price is $4, can you say that the firm is employing the profit-maximizing unit of labor?
5. Technological advance has been a complement to software engineers. If the US government imposes restrictions on all immigration, how would these changes shift the demand and supply curves for software engineers.
6. What are some examples of government policy changes regarding labor that would impact the labor market and how?
7. Identify at least one reason why the federal minimum wage rate should be increased. Also, identify at least one reason why the federal minimum wage rate should not be increased.
8. Labor union participation has been declining in recent years. How do labor unions influence market wages?

**Answers:**

1. Since tires add value to automobiles, the demand for tires will increase (shift to the right) and the equilibrium price and quantity of tires will increase.
2. In the market of PAs, the market demand curve will shift to the right (demand increases) and the equilibrium wages for PAs will increase.
3. Disagree. If the employer is a perfect competitor in the labor market, it employs every unit of labor at the market wage rate which determines its marginal cost of labor. The marginal cost of labor is higher than the wage rate if the firm has market power (e.g. monopsony) in the labor market. While each will hire up to a point where the MRP equals the marginal cost of labor, the imperfect competitor will hire less units of labor and pay lower than the competitive wage rate.
4. MPR = 8 X 4 = $32. At a wage rate of $30, the employer may hire an additional unit if the MRP still exceeds the marginal cost of labor.
5. As a complement to labor, an advancement in technology will increase the productivity of software engineers and hence increase its market demand curve. However, immigration restrictions will cause the supply curve for software engineers to decrease (shift to the left).
6. Increase in the education standard to enter a profession: decrease in supply; requirement of an increase in certain supplements to labor (e.g. health and retirement benefits): decrease in the demand for labor; tax policy to significantly favor investments in capital (technology): if technology is a substitute (complement) to certain kind of labor, a decrease (an increase) in the demand for labor.
7. An increase in the federal minimum wage rate will increase the household incomes of families earning the minimum wage to align with overall increases in average price levels and incomes. This is expected to decrease the number of households whose earned incomes place them below the poverty income threshold. An increase in the federal minimum wage rate increases the marginal cost of labor to employers which may cause employers to hire less units of labor.
8. Labor unions engage in collective bargaining with employers. If successful, union workers collectively negotiate relatively higher wages, and favorable benefits and supplements to labor. These may be the basis for non-union negotiations and may lead to overall increases in wages to skilled and unskilled labor.