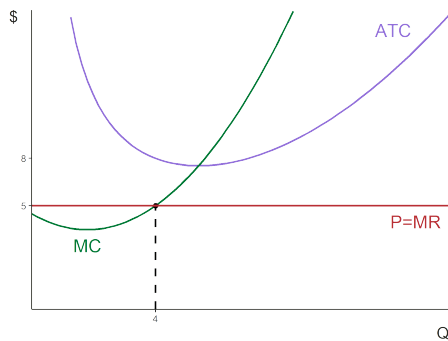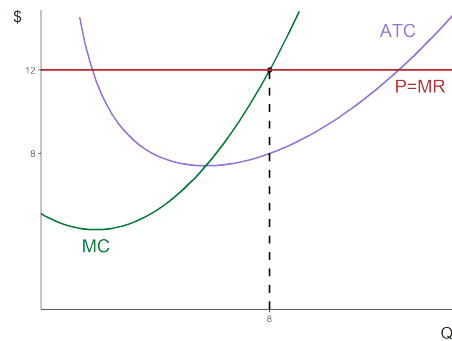1. A firm has the cost function $C(Q) = 4Q^2 + 12Q + 36$. It operates in a perfectly competitive market.

    (a) At what price will this firm make exactly zero profit?

    (b) What is the firm's profit maximizing quantity if price is \$40? How much profit does the firm make?

2. For the Cost Function $C(Q) = 3Q^2 + 35$ find the Marginal Cost, Average Fixed Cost, Average Variable Cost, and Average Total Cost. What price and quantity meet the zero profit condition?

3. For the following Marginal Product of Capital $MP_K = 5K^{1/2}$ what is the amount of capital the firm should rent if the rental rate is 10 and the output good is sold at a price of 20?

4. For each graph below, write whether the firm will be receiving positive, negative or zero profits.

(a) _____   (b) _____