a) As Brunelle Inc. enjoys monopoly power, its demand curve is the demand curve for the industry and is therefore downward sloping. Brunelle needs to lower the price of its product in order to sell more output, but this lower price also applies to all previous units of output produced, resulting in a marginal revenue curve that is lower than its demand curve.

b) [Graph with labeled axes and marginal revenue curve labeled MR, marginal cost curve labeled MC, and average cost curve labeled ATC.]

c) As shown above, total revenue is maximized at the level of output at which $MR = 0$, and the $P^*$ is the price level of this quantity off the demand curve.
d) No, it is not. At $Q^*$, Brunelle is producing at a price that is above the marginal cost the firm faces ($P > MC$). In this scenario, there is an underallocation of resources, as society is willing to pay more for the good than it is for other uses of its money.

e) Brunelle will slowly lose monopoly power and a duopoly would emerge for the good Brunelle produces, as the demand curve would become more elastic, and therefore less steeply shaped (more horizontal).
a) In a monopoly, the demand, or average revenue curve is greater than the marginal revenue curve. This is because, as you sell one more good, your average revenue increases. However, as you lower your price to sell one more product, you need to lower your price for the previous consumers. So the marginal revenue of selling one more good is equal to the revenue added, minus the lost revenue from previous purchases.

b) (i) & (ii) See above graph for Q* and P*

(iii) See shaded area.

c) If Brunelle wanted to maximize total revenue, they would produce where the ATC is at its minimum.
d. No Brunelle is not producing at the allocatively efficient level of output. Allocatively efficient means that the price of the last good sold is equal to the marginal revenue generated by it. Brunelle is selling too little of an output.

e. If more firms adopt the same technology, it be and if there are no barriers for market entry, Brunelle will no longer be a monopoly. This will cause the demand curve to become more elastic. This is because there will be more substitutes for the product, and consumers will go elsewhere if the price gets too high.
a) Since price does not equal marginal revenue the price does not dictate the demand. Brunelle charges a profit maximizing price at that point the supply does not meet the demand so marginal revenue is separate not equal to demand.

b) [Diagram with demand, marginal cost, and profit margins]

c) On above graph

d) If they are producing at $p^* \times q^*$ then yes they are producing the allocatively efficient level of output. This is because $MC = MR$ at this point and as long as that is true output is efficiently allocated.
2) As other firms adopt the same technology as Brunelle, the demand for Brunelle's goods will shift to the left and total demand will decrease. This is because others are making the same goods as Brunelle and people can buy the goods elsewhere causing the individual firm of Brunelle to lose demand for its goods.