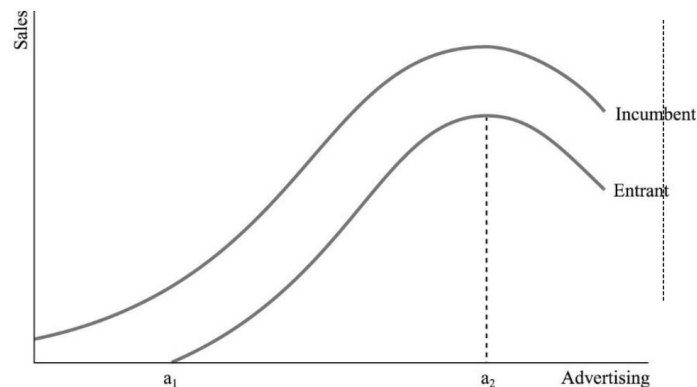


Practice Questions 3

1. In what ways might a heavy advertising campaign by an incumbent firm raise barriers to entry? Illustrate your answer by drawing possible advertising response functions for an incumbent and an entrant.

- Advertising increases the costs of production.
- High levels of advertising build up a reputation.
- Brand proliferation can also act as an entry barrier by denying an entrant sufficient market space.



2. On theoretical grounds, explain why a higher level of advertising might be expected in an oligopoly than in either of the polar cases of perfect competition or monopoly.

From a theoretical perspective, we might expect the importance of advertising to vary according to market structure. Under perfect competition, there appears to be no role for advertising, because each firm faces a perfectly elastic demand curve and can sell as much output as it wants at the current price. All market participants are assumed to have perfect information, which appears to eliminate the need for firms to advertise. Under monopoly, there appears to be some scope for advertising, although this scope is still perhaps limited. The monopolist faces an inelastic demand curve and is insulated from competition by entry barriers. The monopolist can therefore choose the price it charges. There may be some incentive to advertise if advertising is effective in increasing total industry demand. But there is no incentive to advertise in order to tempt consumers away from competitors, since by definition a monopolist has no competitors. Under oligopoly, firms that recognize their interdependence may prefer to avoid price competition, and instead engage in non-price forms of competition such as advertising or research and development. There may be strong incentives to advertise, both in order to increase total industry demand and to attract customers at the expense of competitors.

3. What factors should be taken into account by a firm that is seeking to strengthen the loyalties of consumers to its brand?

Brands and trademarks are used widely to differentiate similar products. Trademarks are words or symbols used to identify particular brands. In many cases, a firm, which has developed a trademark, will also hold exclusive property rights to use the trademark. In some cases, the brand or trademark eventually becomes synonymous with the product. For example, the brand name

Hoover has become widely used as a generic term for any vacuum cleaner, or the brand name Walkman has become used as a generic term for a personal stereo. Brands need to have values that are desirable and easy to identify (dependability, reliability or innovation). These values must be communicated as perceived benefits to consumers. Brands should be aimed at particular market segments and advertised in a variety of ways (via print, outdoor, TV, radio and websites). The promotion of a relationship of trust with consumers through a consistent and continuous relationship will also help strengthen the brand.

4. Explain the methodological difference between representative consumer models and spatial or location models of product differentiation.

In representative consumer models, consumers have tastes or preferences for goods or services, and firms compete to attract consumers by differentiating the goods or services they offer. In spatial or location models, consumers have tastes or preferences for the characteristics that are embodied in goods or services.

5. What is the distinction between natural and strategic product differentiation?

Natural product differentiation refers to those goods whose distinguishing characteristics arise from natural attributes rather than having been created deliberately by the actions of suppliers. Strategic product differentiation refers to those goods whose distinguishing characteristics have been consciously created by suppliers. For example, the decision to create a new brand and promote it by means of advertising or some other type of marketing activity.

6. Explain carefully the distinction between the three degrees of price discrimination.

First-degree price discrimination involves making the price per unit of output depend on the identity of the purchaser *and* on the number of units purchased. Second-degree price discrimination involves making the price per unit of output depend on the number of units purchased. Third-degree price discrimination involves making the price per unit depend on the identity of the purchaser.

7. What conditions must be satisfied for a producer to be able to implement a policy of price discrimination?

The price discriminating firm must enjoy some degree of market power so that it has the discretion to choose its own prices. The market for the product must be divisible into submarkets, within which there are different demand conditions (or different price elasticities of demand). These submarkets must be physically separate through either space or time so that secondary trade or resale between consumers in different sub-markets is not possible.

8. Explain the distinction between the concepts of Pure Strategy Nash Equilibrium and Subgame Perfect Equilibrium.

In a Pure Strategy Nash Equilibrium, no player can improve his payoff by changing to a different strategy if all of the other players keep their strategies unchanged. The current set of chosen strategies is therefore mutually reinforcing, in the sense that no player faces an incentive to change his own strategy provided no other player changes their strategy. In a sequential game, which can be viewed as a series of subgames, a Subgame Perfect Equilibrium is equivalent to a Pure Strategy Nash Equilibrium within one subgame of the larger sequential game.

9. **With reference to the relative magnitudes of the payoffs in the strategic form representation, examine the circumstances in which a sequential game would confer either a first-mover advantage, or a second-mover advantage.**

Consider a technological standards game, in which there are two standards. If both firms always prefer that they each adopt a different standard, but each firm has the same preferred standard, then there is a first-mover advantage. The firm that moves first chooses its preferred standard, and the firm that moves second chooses the other standard. If one firm always prefers that they both adopt the same standard, while the other always prefers that they each adopt a different standard, then there is a second-mover advantage. The firm that moves second achieves its preference by waiting to observe the choice of the firm that moves first, before deciding on its own move.

10. **Imagine a street with three coffee shops: Café A, Café B, and Café C.**

- Cafés A and B both serve similar-quality espresso drinks but Café A has a more spacious interior and co-working space.
- Café C specialises in organic teas and only a limited selection of espresso drinks.
- All cafés charge similar prices.

- a) Using **Hotelling's location model**, explain how the relative positioning of these cafés affects consumer choice.
- b) How would **Salop's circular model** be more appropriate in this context if there were more cafés spread around a busy city district?
- c) Describe how each of the three cafés could use **strategic product differentiation** to increase their market share without changing prices.

- a) In Hotelling's linear model, Cafés A and B are close substitutes competing in the same segment, so even a small price or feature change could shift customers between them. Café C is further "along the line" (different product category – tea), so a small price change won't significantly affect A or B's demand. It appeals to a different taste preference, reducing substitution unless prices diverge significantly.
- b) Salop's circular model fits better if many cafés exist across a city. Consumers and firms are placed around a "circle" based on preferences like location, opening hours, or ambience. Each café has a segment of nearby consumers. Competition becomes localised—each café attracts those nearest in preference space (e.g., students preferring a study café, or health-conscious customers preferring organic options).
- c) Examples of strategic differentiation:
Café A could market its co-working space and free Wi-Fi, appealing to remote workers. Café B could focus on loyalty programmes and express takeaway service. Café C could enhance its organic and wellness brand, e.g., launching superfood drinks or gluten-free pastries. All of these increase product appeal without price changes by altering perceived value or targeting niche preferences.

11. **A new coffee brand, GreenBean, enters a market where established brands already advertise heavily.** The firm is considering two strategies:
- (i) Invest heavily in brand advertising to signal quality
 - (ii) Offer price discounts and word-of-mouth campaigns instead.

- a. What is the likely role of advertising in helping GreenBean differentiate its product in a monopolistically competitive market?
- b. Suppose GreenBean has low brand awareness and a small initial customer base. According to the advertising response function, what challenges might it face, and how could it strategically overcome them?

a) Advertising allows GreenBean to create **strategic product differentiation**, convincing consumers that its coffee is distinct—even if the core product is similar to competitors. This creates **brand identity** and potential **loyalty**, key features in monopolistic competition.

b) GreenBean likely faces:

- A **threshold** effect: Advertising must reach a **minimum level** before influencing sales.
- Risk of **underinvestment**, where small campaigns have no effect.

To overcome:

- Combine advertising with **targeted promotions** or partnerships to build recognition.
- Focus on **social proof** (reviews, influencer endorsements) to amplify reach without incurring massive upfront costs.

12. **Trainline Ltd. offers train tickets in the UK and uses dynamic pricing and promotional offers.**

- Standard adult tickets are priced at £40.
- Students with a valid railcard pay £25.
- Customers booking online 30 days in advance pay £20.
- Walk-in customers on the day of travel are charged £45.

a) Identify **which types of price discrimination** are being used in the examples above. Link each pricing strategy to one of the three degrees of discrimination.

b) Explain the **conditions** that allow Trainline Ltd. to apply these forms of discrimination successfully. In your answer, consider **market power, consumer groups, and resale limitations**.

a)

- Student discount (£25) → **Third-degree** (by observable group: students)
- Early-bird online (£20) → **Second-degree** (based on booking time = versioning)
- Day-of-travel fare (£45) → Also **Second-degree** (late purchase implies higher willingness to pay)

b) Trainline Ltd. can implement price discrimination because:

- It has market power over train services on specific routes.
- It can segment the market by observable characteristics (student ID, booking date).
- Resale is not feasible: Train tickets are non-transferable, often tied to ID or timestamp, preventing arbitrage between consumer groups.

13. You are a pricing analyst at a consumer electronics firm that is launching a new **smart wearable device**. The product is expected to follow a standard **4-stage product life cycle**, as shown in the diagram (Launch → Growth → Maturity → Decline). Your task is to propose a **pricing and advertising strategy** across each stage that **maximises long-run profitability**, based on economic principles.

A) For each of the four life cycle stages, complete the table below with your proposed **pricing strategy** (e.g., skimming, penetration, cost-plus, dynamic, bundle) and a brief **economic justification**.

Stage	Proposed Pricing Strategy	Economic Justification
Launch		
Growth		
Maturity		
Decline		

B) Advertising effectiveness changes over the product life cycle. Using the concept of **advertising response functions**, explain:

- At which stage advertising has the **highest marginal return**
- When **oversaturation** may occur
- How the incumbent vs. entrant firm's position matters for advertising spend

C) Your firm is deciding whether to **extend the maturity phase** by launching minor upgrades or let the product decline naturally. Using economic reasoning, outline **two benefits** and **one risk** of attempting to prolong the product's maturity.

a)

Stage	Proposed Pricing Strategy	Economic Justification
Launch	Skimming	Low price elasticity, novelty, no competition — captures consumer surplus and recovers sunk costs (R&D, marketing).
Growth	Dynamic pricing / versioning	Demand is growing, competition increases — price can adapt to segments (e.g., student vs. premium users).
Maturity	Penetration or bundle pricing	Competition is intense, demand plateaus — use lower prices to maintain market share and bundle with services.
Decline	Cost-plus or markdown pricing	Declining demand, price-sensitive consumers — goal is to clear inventory and retain residual market.

b) **Highest marginal return:** During **Launch** and **early Growth**, when awareness is low and market penetration yields high demand response.

Oversaturation risk: In **Maturity**, heavy ad spending may yield diminishing returns or even backlash (as shown in the advertising response function).

Incumbents benefit from brand recognition and can spend less per marginal customer; **entrants** must overcome threshold effects and spend more to establish recognition.

c) **Benefits of extending maturity:** 1. **Higher cumulative revenue:** Keeps sales stable without launching a new product line. 2. **Exploits brand equity:** Upgrades can be marketed using existing brand loyalty and channels.

Risk: Consumer fatigue: Incremental upgrades may reduce willingness to pay for future products and devalue brand prestige.