BACCALAURÉAT-Session 2018

Epreuve de Discipline Non Linguistique

Mathématiques/Anglais

Topic: functions

Indian businesswomen

Bijoux Place is launching with a capsule range of 15 products, all priced between £30 and £100. This midmarket price point puts Bell in very competitive territory, up against players like Pandora and Oliver Bonas.

"Most industries that are worth going into are competitive," she says. "If you start from scratch(1) you have to create demand, whereas my research shows that 80% of women buy costume jewellery online." Bell understands the e-commerce model well, and is "starting small", she says, to see where the idea can take her. With Bijoux Place, Bell claims she is responding to customer need.

For every piece of jewellery purchased, Bijoux Place promises to educate a woman in India for a year, or issue a micro grant to help a female entrepreneur in Rajasthan get started. The website will also become an inspirational hub for women.

"Women buy themselves jewellery to reward themselves for success or for a night out," says Bell. "Wouldn't it be great if, as Western women, we could help someone in need to create a better life when we treat ourselves?"

Extract from an article of the "Telegraph" By Rebecca Burn-Callander, 19 Feb 2015

(1) Doing something from scratch is doing it without making use of anything that has been done before.

Questions

1. Make a short presentation of the text.

2. A student who admires Bell makes and sells necklaces for charity. The material for each necklace costs her £6 and she has been selling an average of 20 per day at £10 each. She has calculated whether to raise the price or not and has realized that for every pound increase she would lose 2 sales a day.

a. How many necklaces would she sell if she raised her price to £11? Would it be a good idea? Why?

b. How many necklaces would she sell if she raised her price to £17? Would it be a good idea? Why?

c. Let x be the amount of money, in pounds, which is added to the original price and $P(x)$ the profit made by the student. Show that $P(x) = -2x^2 + 12x + 80$.

d. To maximize profit, what should her selling price be?

3. What is your opinion about new forms of business?