***Homework – beginning a business***

You were asked to do the following:

Think about running a burger stall and identify the things you need to think about when planning to begin the business. Identify 5 key factors to consider (the key factors should be the most important).

Have a look at the following website for some guidance

<https://www.bbc.com/education/guides/zc3gkqt/revision>

Here are some answers:

1. What location should I use for the stall?

*Location will be important since you will need to ensure you have enough customers passing-by*

1. Customers: how many will I need? What sales will I achieve?

*An idea will be needed as to how many customers or what level of sales are needed in order to earn a living*

1. Will I require staff? Would they be part time or full time?

*If the business becomes big or has busy periods then extra staff will be needed*

1. What money will I need to invest? The business needs to make a profit to survive and may need money to start it (buying stock, for instance, or paying rent).

*All businesses take a while to earn profit. Cash will be needed at the outset to invest, pay staff, and so on.*

1. Will I need a plan for the business? A plan will show what you anticipate happening over the next 12 months, including budgeting to finance the business and to make sure it generates enough cash to pay the bills.

*A plan is essential month by month to make sure that the business has realistic targets to aim for*

Task 2 - answer

Using the information we have been given about Janette’s business, we can see that her profit can be calculated according to the following formula:

**PT = (P – C) x B – FC**

PT = profit

P = price at which each burger is sold

C = cost of each burger to Janette to purchase.

FC = fixed costs of setting up the pitch.

B = number of burgers sold

Confirm that you have the correct formula by showing the Janette’s profit will be £310 using the following data:

* + - Janette sells 150 burgers.
		- She sells her burgers for £3.20 each.
		- The cost per burger for Janette to purchase is 80p.
		- Pitch costs are £50.

**PT = (P – C) x B – FC = (3.20 – 0.80) x 150 – 50 = £310**

Task 3 - answer

1. Using the profit formula and the other available data, the

 answer would be:

 PT = (3.20 – 0.8) x 185 – 120 = £324 per day or £972 for 3 days.

2. If located at the stage the profit would be:

 PT = (3.20 – 0.8) x 185 – 444 = £0 per day and £0 for 3 days.

 There is no profit made at this level of sales (and no loss

 either). The sales of 185 burgers per day is given a

 special name and it is called the ***break-even point****.*

3. In order to answer how may burgers are needed to make a profit of £2100 over the 3

days, we have to make B the subject of the equation. It can be re-arranged, as follows:

Re-arranging the profit formula:

PT = (P – C) x B – FC

Begin to isolate B by adding FC to both sides gives:

PT + FC = (P-C) x B.

And dividing both sides by (P-C) gives:

 $\frac{PT+FC}{P-C}$ = B, or B = $\frac{PT+FC}{P-C}$

Substituting in the values using PT = 2100/3 = 700 gives a daily value of burger sales of:

$\frac{700+444}{3.20-0.80}$ = 476.66 or 477 whole burgers, which is equivalent to

1431 burgers over the 3 days to generate a profit of £2100.

This can be confirmed by inserting the burger sales into the profit equation:

PT = (3.20 – 0.80) x 477 – 444 = £700.80 or 2102.40 over 3

days which is approximately equal to £2100.

Homework – customer service

Have a look at the following website and read the short document.

<https://www.icaew.com/archive/library/subject-gateways/marketing-and-sales/customer-relations/small-business-update/how-to-deliver-first-class-customer-service>

Answer the following question:

**Identify 3 key factors that will help Janette to attract customers to her business whilst she is at the festival**

Suggested answers:

The following key factors might be relevant:

 Be better than the competition

1. Understanding your customers
2. Offer excellent customer service

**Explanation**

1. There will be a lot of food stalls at the festival and Janette must make her stall inviting. This might involve ensuring that it looks good, the food smells good and that her prices are not too high compared with what others are offering.
2. Janette must understand what customers want. She won’t know people at a personal level at the festival but she will have an understanding of what it takes to sell burgers. This might involve ensuring she uses the best products, has appropriate condiments (tomato and other sources), and sells other products that might be needed such as soft drinks.
3. Janette must offer good service standards. She must have enough staff to service customers. She must have enough food cooking to make sure that they do not wait too long. She must have enough stock of everything she sells to make sure that she does not disappoint customers.

Task 4 - answer

1. Using the linear sequence, Jeanette will sell 3n+2 burgers and, in the fifth hour when n=5, the number of burgers sold will be:

 3 x 5 + 2 = 17 burgers

1. The stage location quadratic sequence for the first, 5 terms is 0, 3, 8, 15, 24.

The formula for this sequence is calculated by finding the 2nd difference from the sequence provided, as follows

 The second difference is constant and hence this confirms that the sequence is quadratic. Because the difference is ‘2’, the sequence is related to the sequence of square numbers 12, 22, 32 …. or 1, 4, 9, and so on.

The terms in our sequence are: 0, 3, 8, 15 and 24. These are each one less than the sequence of square numbers. Therefore, the nth term in the formula is given by: n2 – 1

‘1’ is subtracted from n2 to produce the original sequence. We can test this. For example, for n=3 we have: 32 – 1 = 8.

Using the quadratic formula just derived, the number of burgers sold for the 10th hour is:

 102 – 1 = 99

Task 5 - answer

1. In a Fibonacci sequence, the next number in the sequence is the sum of the previous two numbers.

The first seven digits in a Fibonacci sequence beginning 1,3 are as follows:

 1, 3, 4, 7, 11, 18, 29

 The answer is that Jeanette will have 29 customers during the 7th hour.

1. The Fibonacci sequence indicates an ever-increasing number of customers. It is possible for such a sequence to develop only over a short period of time (after 10 hours, for example, the number of customers is 123 for the sequence provided). The number quickly rises and becomes unrealistic (after another 5 hours, the customers would be 1364!).

Customers might follow this growth pattern because

* + a queue of people might indicate a popular product. Or,
	+ throughout the day, more people may enter the festival, or
	+ customers might tell their friends that the burgers are great and word of mouth might develop,

These are not guarantees that a Fibonacci sequence will develop. They are just indications of growth. It is well, known, however, that Fibonacci sequences appear widely in nature.