Task A

There are two types of computer control: open loop system and feedback system.

In the table below tick whether the examples provided use an open loop or feedback system. Justify your answer.

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| **Example** | **Open loop** | **Feedback** | **Justification** |
| Putting the microwave on for two minutes. |  |  |  |
| Pre-heat an oven to 180 degrees. |  |  |  |
| Anti-lock brakes in a car. |  |  |  |
| Putting the dishwasher on an eco-setting which will wash for 30 minutes. |  |  |  |

Task B

Identify one advantage and one disadvantage to using an open loop system and feedback system.

Open loop system

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Feedback system

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Task C

In the table below identify whether a laptop (general purpose system) or a washing machine (special purpose embedded system) would be better and justify your choice.

Remember, the laptop will be using off-the-shelf systems software whereas a washing machine will use a very specific operating system.

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| **Criteria** | **Choice** | **Justification** |
| Which would be easier to regularly update? |  |  |
| Which one would be easier to transfer data from one device to another? |  |  |
| Which would be easier to manage? |  |  |
| Which one would be easier to reset/restore to original settings? |  |  |
| Which one would be the most cost effective? |  |  |
| Which one would be the fastest to load? |  |  |
| Which one should perform each task with maximum efficiency? |  |  |
| Which one is more vulnerable to malware? |  |  |

Task D

Automobiles such as cars contain a wide range of feedback systems.

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Identify feedback systems found in cars and identify their function/purpose.

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| **Feedback system** | **Purpose** |
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