1.

Communication Interfaces	
Universal Asynchronous Receivers/Transmitter (UART)	Eight UARTs
Synchronous Serial Interface (SSI)	Four SSI modules
Inter-Integrated Circuit (I^2C)	Six I^2C modules with four transmission speeds including high-speed mode
Controller Area Network (CAN)	CAN 2.0 A/B controllers

2. error correction: the sender and receiver must decide on the same error correction system so they can implement the same decoder. Error correction is important because otherwise one wrong sent bit can mess up a whole transmission.

Voltage levels: must set a limit for voltages so you can determine which sent signal is a 1 or a 0, otherwise you could receive the correct voltage but read it as the wrong bit.

3.

Step 1: Customer queries merchant about availability of product (e.g., “list all available t-shirts”).

Availability,

Step 2: Merchant sends lists of products (e.g., “green t-shirt $10, blue t-shirt $14, grey t-shirt $12, ...”).

Availability, integrity

Step 3: Customer chooses product (e.g., “want to buy blue t-shirt”).

authenticity

Step 4: Merchant requests payment (e.g., “provide payment for $14”).

confidentiality

Step 5: Customer sends credit card information (e.g., “charge to Visa 1234 ..., exp 12/26”).

confidentiality

Step 6: Merchant confirms order (e.g., “order #XYZ987 complete”).

Non repudiation

	confidentiality	integrity	authentication	Non-repudiation	availability
Step 1	no	no	No	No	yes
2	No	yes	no	No	Yes
3	No	no	yes	no	No
4	Yes	no	No	No	no
5	Yes	no	no	no	No
6	no	no	no	Yes	no

4

A mariott hotel electronic breach in the business catengory: 383,000,000 records were reported exposed. The exposed files contained credit card details, passport numbers, birthdays and more. Its one of the largest data breaches in history.

B for breach categories it is plain to see that an overwhelming majority of breaches were in business.

The population of the usa is 339 million, while the total number of breached files exceeds that at a staggering 446 million.

C

Obvious number one answer is to have different passwords for each login, use a password manager to make it easier to remember and then store the password for that somewhere offline so there's no hope for it getting stolen except in a data breach

Check databases for login information to see if your data has been exposed in a breach recently. The one I use is https://haveibeenpwned.com/

Another way to keep your accounts safe is to have 2 factor authentication enabled, your phone number is relatively secure but can still be worked around so it is important to still make sure your password is secure.

Finally, it should be common sense, but it is very important to not tell other people your login information. Especially websites that are untrustworthy, it may be difficult at first to determine which websites are sketchy and should not be trusted, but it gets easier with time and just being cautious.

5

A since there are about 2,628,288 seconds in a month that means there is 270 exabytes/2,628,288 second = 270,000,000 TB/2,628,288 seconds = 102.728468 TB a second of data being transferred

B 102.728468 TB = 102728.468 GB; 102728.468/50 = 2054.56936 blu-ray disks a second

C 270,000,000 TB / 5,000,000,000 = 54 GB of data per device per month.

System ->	Self-driving car	Smart Dishwasher	EZ pass for tolls
Sensing	Detects other cars in lanes next to, cars in front and behind. Pedestrians as well.	Washes dishes	Allows for easy transport through toll areas on highway
Computation	Follows road laws and safely navigates the road with GPS	Determines the amount of heat, water, and soap to apply based on the number of dishes and how dirty they are.	The unique serial is detected and matched to your vehicle.
Physical Response	Goes from point A to point B based on manual input, and does it safely.	Washes for x amount of minutes based on the capacity of the washer	The vehicle is allowed to pass freely without any additional cost