1. You want to make a purchase using bitcoin. How would your private key be used as part of this process? | 1 / 1 point |

○ Within your preferred wallet app, you create a new message and enter your private key into the recipient field.

◉ Within your preferred wallet app, your private key is used to digitally sign the outgoing message.

○ Nodes within the blockchain network use your private key to generate the nonce.

○ Miners within the blockchain network use your private key to solve the block hash.

> ✓ **Correct**
> Your private key (when paired with your public key) is used to verify that you are the true sender.

2. When a transaction is broadcast to the bitcoin network, what **two** pieces of data does the network verify? | 1 / 1 point |

☐ That the transaction is legal.

☑ That the sender owns the amount of bitcoin they want to spend.

> ✓ **Correct**
> If the sender does not have a sufficient amount of bitcoin, the transaction will not be valid.

☐ That the funds are being transferred to the correct recipient (address).

☑ That the sender has authorized the transaction.

> ✓ **Correct**
> The network uses the sender's public key to ensure that the digital signature on the message is authentic.

3. Which of the following elements are included in a block? Select all that apply. | 1 / 1 point |

☑ The hash of the previous block

> ✓ **Correct**
> By referencing the hash of the previous block, each block is linked to the one before it, thereby creating a chain.

☑ Transactions

> ✓ **Correct**
> Miners work to order and record new transactions into each block.

☑ Nonce

> ✓ **Correct**
> The nonce is an arbitrary number that miners are racing to find--essentially guessing and testing different nonces until they stumble upon one that "works" (i.e. which produces a resulting block hash that has a certain number of leading zeroes).

☑ Block hash

> ✓ **Correct**
> The block hash is like a fingerprint for a block. It identifies the block and its contents and is always unique.

4. The total processing power of a blockchain network is known as: | 1 / 1 point |

○ Proof of work

○ Consensus mechanism

◉ Hash rate

○ Difficulty

> ✓ **Correct**
> The hash rate represents the total processing power of a blockchain network.