Answers

Task 1

An online security company has asked you to research some virtual private network (VPN) providers and provide them with information from your findings. They are particularly interested in the following providers:

* Perimeter 81 (VPN products)
* Windscribe
* NordVPN

(a) Write a brief summary of the services provided from the above companies.  
  
Perimeter 81 – Wi-Fi protection – all data secured with 256-bit encryption. Anonymous activities – all outbound and inbound traffic is encrypted and routed through private servers / IP address is masked (other products are available from this company).  
  
Nord VPN – complete privacy of IP address, secured with encryption when using Wi-Fi, stream video through different locations around the world, works on all devices including Windows / macOS / Linux / Android / iOS. Up to 6 devices per account – can be used with smart TV and router  
  
Windscribe – Blocks malware and ads, no identifying logs, 256-bit encryption, 4096-bit RSA key, team accounts, free plans for those with tight budgets, static IP addresses, Port forwarding  
  
An explanation of some of these features  
  
256 bit encryption. The number of bits used related to how complicated the encryption will be to hack by brute-force. The larger the number the better. Banks and military typically will use 256-bit. 50 supercomputers would require up to 3x1051 years to decrypt with current technology. The age of the universe is around 1.3x109 years. As such it is very secure.  
  
Masking an IP address means that the address of users is not seen by the websites they visit. This will not be perfectly secure, but would be sufficient for business level security. By not storing logs, there will be less information for law enforcement to discover the original user.  
  
It is possible to use VPN on a router. This will then encrypt the network communications of all devices that use the router once they exit the premises.

(b) The online security company would also like to know the difference between a business VPN and a personal VPN. Give a summary of the two types of VPN for the company below.  
  
**Personal**  
  
This is used for personal purposes. It could be used for streaming video/TV/film from another region in the world by going through the VPN companies servers (so that the exit IP address is in a particular country)  
  
Communication will be encrypted between the device and the VPN provider’s servers. This will give users a secure connection to the Internet, especially when accessing from a public place. It is particularly important for passwords that are transmitted (such as when checking email), banking and other sensitive uses.  
  
**Business**  
  
Businesses can enable VPN so that it performs encryption between the employee’s devices and their own servers/LANs. This allows the devices to form an extended part of the LAN/WAN. Business VPN will allow multiple users to be set up at once. It will help to make them compliant with the Data Protection Act (2018), secure business communications and protect confidential data and passwords

Task 2

Working from home has been shown to have a number of benefits.

Choose from one of the below activities:

**A:** Read the press release at: <https://www.cosocloud.com/uncategorized/connectsolutions-survey-shows-working-remotely-benefits-employers-and-employees>

Find out new facts or statistics about home working and write down as many of these as you can.

Four facts are already given on the slide for productivity – these should not be used in answer to the question as it is asking for **new** facts.

24% of people accomplish the same amount of work in the same time (from the slide 30% accomplish more in less time) – it is reasonable, therefore, to deduce that 46% of people accomplish less.

42% of remote workers feel they are just as connected with colleagues and 10% feel more connected. It is reasonable to assume that 48% feel less connected.

Savings per employee are $5,240 per year. 45% of remote workers are getting more sleep, 35% are getting more physical exercise, 42% are eating healthier. 44% have a more positive attitude, 53% have less stress.

There are many other statistics in the article.

**B:** Alternative challenge: Read the academic paper titled “Does Working from Home Work? Evidence from a Chinese Experiment” available here: <https://www.gsb.stanford.edu/faculty-research/working-papers/does-working-home-work-evidence-chinese-experiment>

What were the findings of the study?

10% of US employees work from home (March 2013).

Results are from a Chinese travel agency with 16000 employees.

Remote working led to a 13% performance increase – mostly from working more time for each shift, including fewer breaks and sick days.

There was improved work satisfaction and lower staff turnover.

As a result, the company rolled out the option of working from home to all employees.

Task 3

The local Chamber of Commerce has asked you to produce a presentation which they can use to show their members. They would like to know how different remote desktop technologies can be used.

Create a presentation to explain the features of the following remote desktop technologies.

* **Join.me**  
  This is a web-based collaboration software application for screen-sharing and online meetings. To share a desktop or host a meeting, users must first download and install join.me software.
* **Zoho Assist**  
  Remote support software helps you support customers on a remote computer through web-based remote support sessions
* **AnyDesk**  
  allows users to access computers both from personal computers and from iOS and Android mobile devices
* **Parallels Access**  
  Parallels Access allows users to remotely access their Windows/Mac applications and files on their iPhone, iPad, or Android phone/tablet
* **TeamViewer**  
  TeamViewer allows someone to remotely access and control the desktop of your computers and servers from anywhere. It also allows remote support / screen sharing on iOS

Answers given above are to give an idea of what the software does. Students should come up with their own ideas for the presentation based on their research.

Task 4

Some systems are not easy for people to use. Other systems may have parts that are easy to use and other parts that are not.

Work in pairs for this activity.

(a) Choose two systems or apps that you use that have similar features. For example, you may choose to compare Apple Music with Spotify, Windows with Mac or Android with iOS. Write down the **two** products below.  
  
Student answers will vary

(b) For the apps you have chosen, list **five** areas that make the software easy to use.  
  
Student answers will vary

(c) For the apps you have chosen, list **five** ways that the software is hard to use and suggest how ways that it could be improved.  
  
Student answers will vary

Task 5

When using online systems, it is important that a reliable Internet connection is used. A lack of connectivity will result in the online system becoming unavailable.

A local charity is about to start allowing their fundraising staff work from home. These staff work all day on a VoIP phone (Voice over Internet Protocol). They must also use online software to record their calls and process donations.

The charity is concerned by what will happen if an employee or volunteer loses their home Internet connection.

What are at least **five** ways that the charity can reduce the possibility of an Internet connection becoming a major problem?

* The VoIP phone will not work if the Internet connection is lost. Users could be told that they can use their personal phones to make the calls (they could restrict caller ID to respect their privacy)
* They could be issued with a company mobile phone for emergency use
* The online system could cache a list of names on the user’s computer. This would mean that they could still call them if they lose Internet access
* For longer connectivity issues, the company could issue a mobile broadband router which could use the mobile phone network to supply Internet access whilst the problem is resolved
* Offline software could be used to work on documents until the connection is restored
* Data sets of donors could be sent via ordinary mail in an encrypted form. These could then be used for fundraisers to continue to raise money
* A procedure for getting people into head office temporarily could be put in place