

**Across**

**5** Collection of computers and devices connected together via communications devices and transmission media, allowing computers to share resources. (7)

**6** Special network operating system software that needs to be installed on each client computer connected to a server. (3)

**8** Signal that consists of a continuous electrical wave having amplitude and frequency. (6)

**9** Dozens or hundreds of thin strands of glass or plastic that use light to transmit signals. (10)

**12** A small segment of data that is bundled for sending over transmission media. (6)

**16** Transmission from an earth-based station to a satellite. (6)

**17** When two computers send data at the same time and the sets of data collide on the media. (13)

**18** Portion of a company's network that allows customers or suppliers of a company to access parts of an enterprise's intranet. (8)

**20** Computer that controls access to the hardware, software, and other resources on a network and provides a centralized storage area for programs, data, and information. (4)

**21** Electrical disturbance that can degrade communications. (5)

**22** Transmission media that consists of one or more twisted-pair wires bundled together. (11)

**23** Server that manages printers and print jobs. (11)

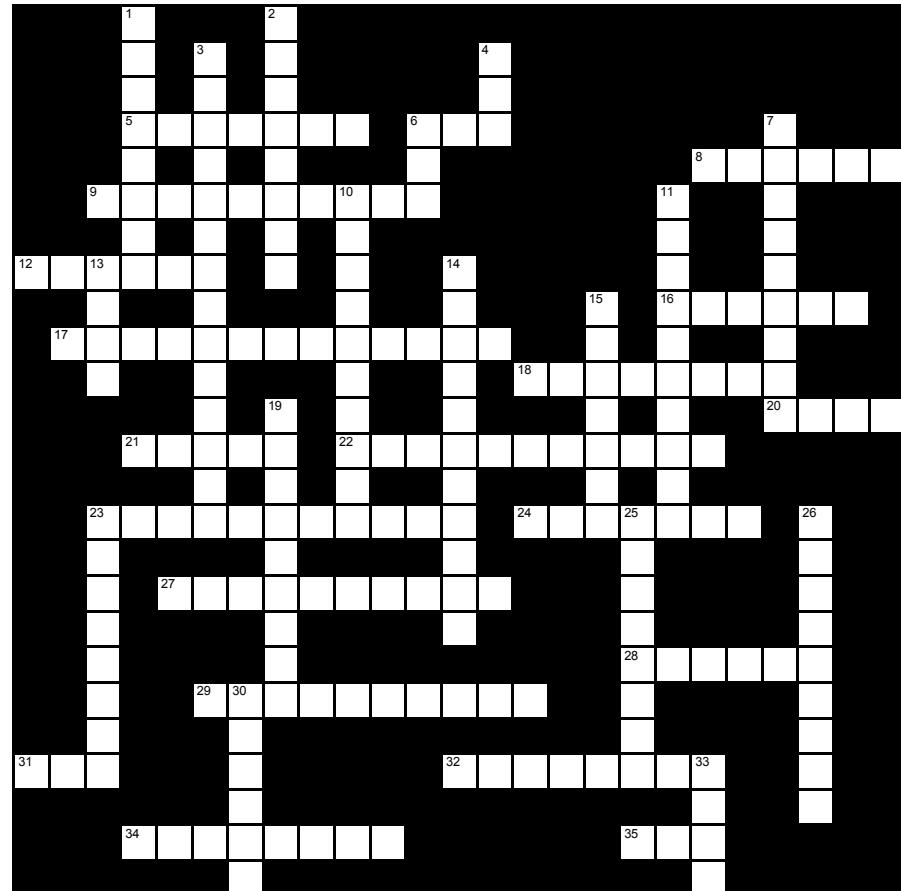
**24** The time it takes a signal to travel from one location to another on a network. (7)

**27** Radio waves that provide a high-speed signal transmission. (10)

**28** Communications device that connects multiple computers or other routers together and transmits data to its correct destination on a network. (6)

**29** The actual speed of data transfer that is achieved in a particular transmission media. (10)

**31** Type of digital technology that provides high-speed Internet connections using regular copper telephone lines. (3)

**Down**

**1** Transmission from a satellite to an earth-based station. (8)

**2** Term used to describe the layout of computers and devices in a communications network. (8)

**3** The process whereby users prove they have authorization to use a computer network. (14)

**4** Navigation system that consists of one or more earth-based receivers that accept and analyze signals sent by satellites in order to determine the receiver's

geographic location. (3)

**6** An expansion card that enables a computer to connect to the Internet. (3)

**7** The amount of data, instructions, and information that can travel over a communications channel. (9)

**10** A device that absorbs a signal so that it is not reflected back onto parts of the network that have already received it. (10)

**11** The process of converting a digital signal into an analog signal. (10)

**13** A single copper wire surrounded by at least three layers. (4)

**14** A go-between connecting computers on the internal network with computers on the external network. (11)

**15** Wireless network that provides Internet connections to mobile computers and other devices. (7)

**19** Computer that delivers requested Web pages to your computer. (9)

**23** Standard, or set of rules, that outlines characteristics of how two network devices communicate to exchange data. (8)

**25** Network standard that specifies no central computer or device on the network should control when data can be transmitted. (8)

**26** Coffee house, restaurant, or other location that provides personal computers with Internet access to its customers. (9)

**30** Anyone who unlawfully breaks into a computer system. (6)

**33** Type of network topology in which a cable forms a closed loop circle with all computers and devices arranged along the circle. (4)