Read the following paragraph and answer the questions that follow.

Today, bicycles are elegantly simple machines that are common around the world. Many people ride bicycles for recreation, whereas others use them as a means of transportation. The first bicycle, called a *draisienne*, was invented in Germany in 1818 by Baron Karl de Drais de Sauerbrun. Because it was made of wood, the *draisienne* wasn’t very durable nor did it have pedals. Riders moved it by pushing their feet against the ground.

In 1839, Kirkpatrick Macmillan, a Scottish blacksmith, invented a much better bicycle. Macmillan’s machine had tires with iron rims to keep them from getting worn down. He also used foot-operated cranks, similar to pedals, so his bicycle could be ridden at a quick pace. It didn’t look much like the modern bicycle, though, because its back wheel was substantially larger than its front wheel. Although Macmillan’s bicycles could be ridden easily, they were never produced in large numbers.

In 1861, Frenchman Pierre Michaux and his brother Ernest invented a bicycle with an improved crank mechanism. They called their bicycle a *vélocipède*, but most people called it a “bone shaker” because of the jarring effect of the wood and iron frame. Despite the unflattering nickname, the *vélocipède* was a hit. After a few years, the Michaux family was making hundreds of the machines annually, mostly for fun-seeking young people.

Ten years later, James Starley, an English inventor, made several innovations that revolutionized bicycle design. He made the front wheel many times larger than the back wheel, put a gear on the pedals to make the bicycle more efficient, and lightened the wheels

by using wire spokes. Although this bicycle was much lighter and less tiring to ride, it was still clumsy, extremely top-heavy, and ridden mostly for entertainment.

It wasn’t until 1874 that the first truly modern bicycle appeared on the scene. Invented by another Englishman, H. J. Lawson, them safety bicycle would look familiar to today’s cyclists. The safety bicycle had equal-sized wheels, which made it much less prone to toppling over. Lawson also attached a chain to the pedals to drive the rear wheel. By 1893, the safety bicycle had been further improved with air-filled rubber tires, a diamond-shaped frame, and easy braking. With the improvements provided by Lawson, bicycles became extremely popular and useful for transportation. Today, they are built, used, and enjoyed all over the world.

1. There is enough information in this passage to show that

**a.** several people contributed to the development of the modern bicycle.

**b.** only a few *vélocipèdes* built by the Michaux family are still in existence.

**c.** for most of the nineteenth century, few people rode bicycles for fun.

**d.** bicycles with wheels of different sizes cannot be ridden easily.

2. The first person to use a gear system on bicycles was

**a.** H. J. Lawson.

**b.** Kirkpatrick Macmillan.

**c.** Pierre Michaux.

**d.** James Starley.

3. This passage was most likely written in order to

**a.** persuade readers to use bicycles for transportation.

**b.** describe the problems that bicycle manufacturers encounter.

**c.** compare bicycles used for fun with bicycles used for transportation.

**d.** tell readers a little about the history of the bicycle.

4. Macmillan added iron rims to the tires of his bicycle to

**a.** add weight to the bicycle.

**b.** make the tires last longer.

**c.** make the ride less bumpy.

**d.** make the ride less tiring.