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1. 1 day

2. 1 year

3. Earth rotates counter clockwise, when viewed from the North Pole, which makes the Sun appear to rise in the east.

4. (a) 1

(b) 1

(c) 2

5. (a) A solar eclipse occurs when the Moon moves between the Sun and Earth and casts a shadow on Earth.

(b) A lunar eclipse occurs when Earth moves between the Sun and the Moon and casts a shadow on the Moon.

6. The Moon must be on the opposite side of Earth from the Sun, meaning the Moon's surface is fully illuminated.

7. (a) The Moon's gravity causes two bulges to occur on Earth's oceans: one bulge on the side of Earth closest to the Moon and the other bulge on the far side of Earth. As Earth rotates these bulges shift, producing tides – the apparent rising and falling of water levels relative to continental masses.

(b) The tides would rise higher and fall lower.

8. (a) Earth's rotation

(b) Earth's axis of rotation is pointed almost directly at Polaris.