43. We apply Eq. 4-33 to solve for speed $v$ and Eq. 4-32 to find acceleration $a$.

(a) Since the radius of Earth is $6.37\times10^6$ m, the radius of the satellite orbit is $6.37\times10^6\,\text{m}+640\times10^3\,\text{m} = 7.01\times10^6$ m. Therefore, the speed of the satellite is

$$v = \frac{2\pi r}{T} = \frac{2\pi(7.01\times10^6\,\text{m})}{(98.0\,\text{min})(60\,\text{s/min})} = 7.49\times10^3\,\text{m/s}\ .$$

(b) The magnitude of the acceleration is

$$a = \frac{v^2}{r} = \frac{(7.49\times10^3\,\text{m/s})^2}{7.01\times10^6\,\text{m}} = 8.00\,\text{m/s}^2\ .$$