9. This problem represents a direct application of Newton's Law of Universal Gravitation written to determine the acceleration of gravity rather than the force, as expressed at the end of the first full paragraph of page 86 of the text.

$$g = G M_M / r^2$$

$$g = (6.67 \times 10^{-11} \text{ N m}^2 / \text{kg}^2)(6.37 \times 10^{23} \text{ kg}) / (3.43 \times 10^6 \text{ m})^2$$

$$g = (4.25 \times 10^{13}) / (1.18 \times 10^{13}) \text{ m / s}^2$$

$$g = 3.60 \text{ m / s}$$

Note that the acceleration of gravity on Mars is smaller than that on Earth.