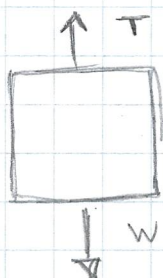


# 20-P-FA-AF-001

## Newton's Law/Equation of Motion: Intermediate

Q: A block that has a mass of  $M$  kg and is attached to a cord that has a tension of  $T$  acting directly upwards. What is the acceleration? (Use -ve to indicate downwards.) use 9.8 for gravity



If it is  $D$  km above the earth's surface. What is the force it exerts on the earth?

A:  $W = mg$   
 $T = T$

$$\sum F = ma$$

$$T - Mg = Ma$$

$$a = \frac{T - Mg}{M}$$

$$r = r_{\text{earth}} + D$$

$$m_1 = \text{earth mass}$$

$$m_2 = M$$

$$G = \text{constant}$$

$$F = G \cdot \frac{m_1 M}{r^2}$$