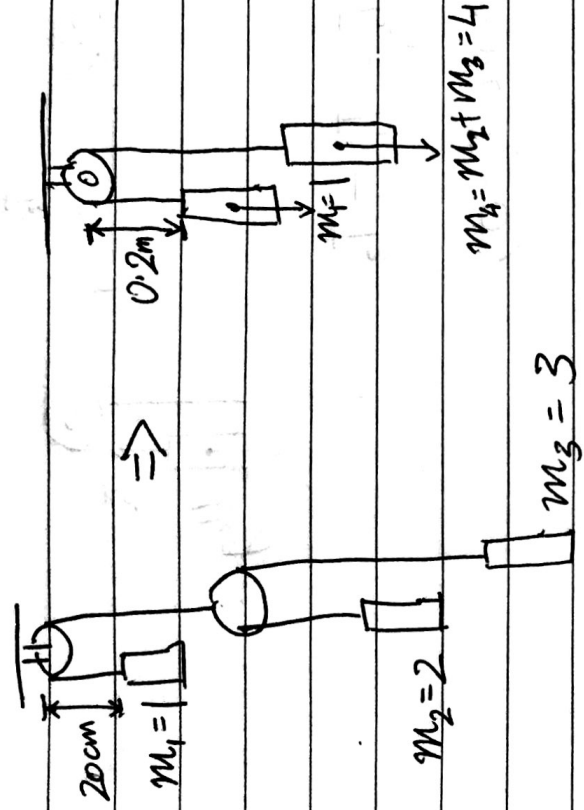




Then $\sum F_i = T_i - F_{g_i}$

$$T_i = m_4 g = 40\text{N}$$

$$\sum F_i = 40 - 10 = 30\text{N}$$

$$F_i = m_1 a$$

$$m_1 = 1$$

$$a = 30\text{ m/s}^2$$

or $s = ut + \frac{1}{2}at^2$

$$s = 0.2, \quad a = 30 \quad u = 0$$

$$0.2 = \frac{1}{2} \times 30 \times t^2$$

$$15t^2 = 0.2$$

$$t^2 = 0.0133$$

$$t = 0.115\text{ seconds}$$

23. At rest, $\sum F = 0$

$$T_i = F_{g_i}$$

$$T_i = m_4 g (m_2 + m_3)$$

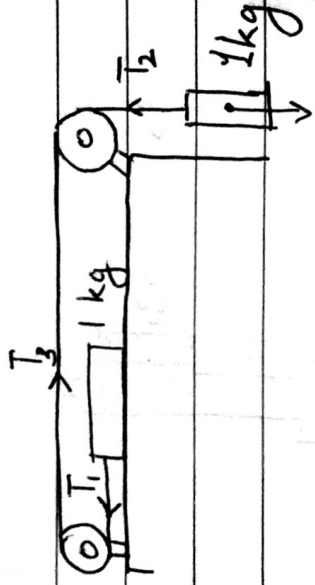
$$m_2 = 2$$

$$T_i = 30\text{N}$$

$$m_3 + 2 = 3$$

$$m_3 = 1\text{kg}$$

24.



$$T_2 = T_1 = T_3$$

$$\text{since } T_2 = 0;$$

$$T_1 = T_3 = mg = 10 \text{ N}$$

25. Same question as 20

26. Same question as 21

27. Same question as 24

28. a) Since there is no ~~net~~ horizontal force acting on M; $\sum F_H = F_g - T_1$

$$T_1 = 0$$

$$\sum F_H = Mg = 10 \text{ N}$$

$$\therefore a = 10 \text{ m/s}^2$$

b) $T_1 = 0$ 