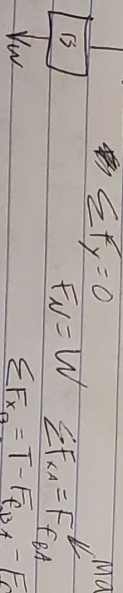


1. Yes, they are equal to each other and they are acting in opposite directions

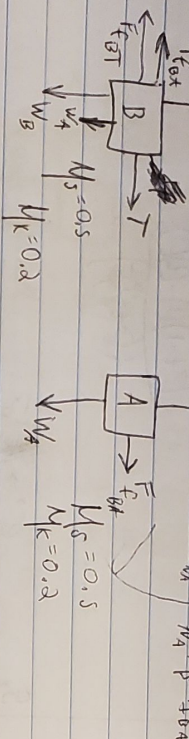
$$F = F_{N1}$$



3. F_N and N

$$T = m_B g (u_A + u_B) + \mu_k +$$

$$(19.6)(0.5) = 9.8 N$$



$$m_B = 5 \text{ kg} \quad m_A = 2 \text{ kg} \quad \sum F_x = 0$$

$$W_B = m_B g = 49 \text{ N} \quad W_A = 19.6 \text{ N} \quad \sum F_y = 0$$

Block A is

also accelerating

in the same

direction

because

the blocks are moving together

$$\sum F_{x13} = T - F_{B21} - F_{A21} = m_{B+A} a$$

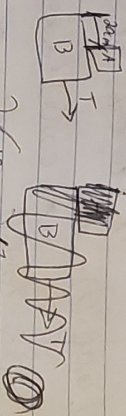
$$4.9 \text{ m/s}^2$$

$$T = m_B g (u_A + u_B) + \mu_k +$$

$$68.6 + 9.8 + 13.72 = 92.12 \text{ N}$$

8. Block A is not stationary relative to the table. It moves to the right relative to the table because it still has a force of friction between the blocks A and B

9.



$$2(48.02)/7 = 13.72 \text{ m/s}^2$$

$$x = \frac{1}{2} a t^2 + v_i t + x_i$$

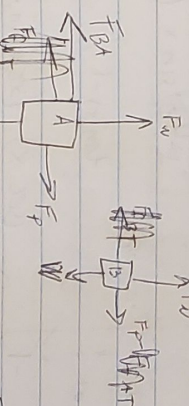
$$t = \frac{\sqrt{2ax}}{a} = 0.17 \text{ seconds}$$

10. They are the same because the coefficient of friction between them is 1.0.

11. They are different because one block is heavier than the other. $F = ma$ will look different

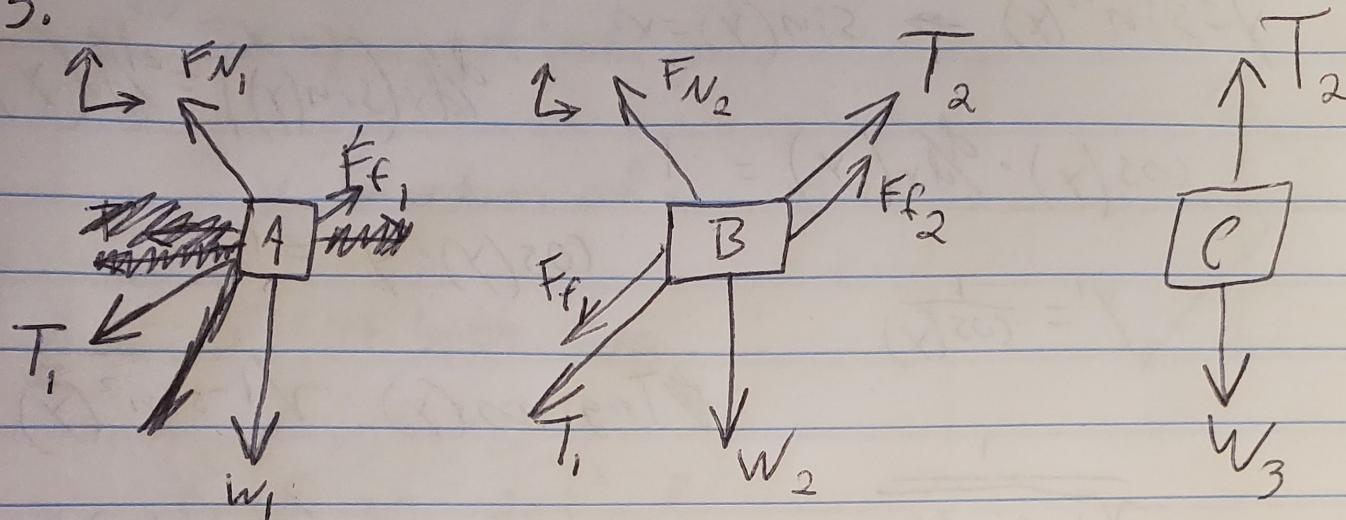
12. The force they exert on each other will be the same because they are not accelerating away from each other

13.



$$\sum F_{x1} = m_1 a = F_P - F_{B1}$$

13.



14.

Odin is ~~wrong~~ ^{wrong} because $F=ma$ and $a=\frac{F}{m}$.
 a net force is not present on an object with mass, therefore it is ^{not} accelerating.

Bhodie is right ~~too~~ because the box is not accelerating.