

## More Forces Blocks and Pulleys

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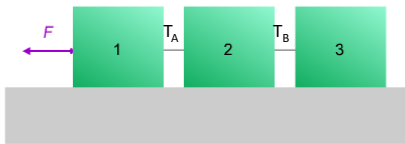
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### Blocks

1. Draw free-body diagrams for each block.  
Assume a frictionless surface.




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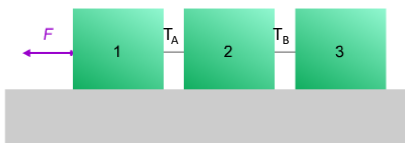
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### Blocks

2. If  $F = 25 \text{ N}$  and each block has a mass of  $2.5 \text{ kg}$ , determine the tension in  $T_A$  and  $T_B$ .  
( $T_A = 16.6 \text{ N}$ ,  $T_B = 8.3 \text{ N}$ )




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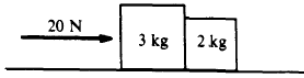
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3. What is the force of the big mass on the little mass? *(8N)*

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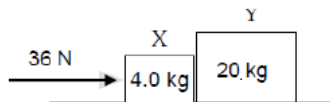
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4. What is the force of X on Y? *(30N)*

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5. Two blocks of masses 4.00 kg and 3.00 kg are placed in contact with each other on a frictionless horizontal surface. A constant force of 9.00 N is applied to the 4.00 kg block.

- Determine the acceleration of the two-block system. *(1.29 m/s<sup>2</sup>)*
- Determine the magnitude of the contact force between the two blocks. *(3.87 N)*

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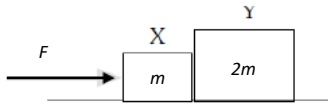
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No numbers



6. What is the force of X on Y? ( $\frac{2}{3}F$ )

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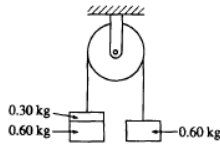
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Atwood's Machine

7. Determine acceleration of the masses  
( $1.96 \text{ m/s}^2$ )



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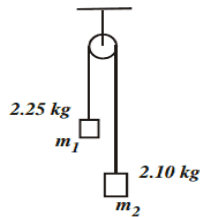
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8. Determine the acceleration ( $0.334 \text{ m/s}^2$ )



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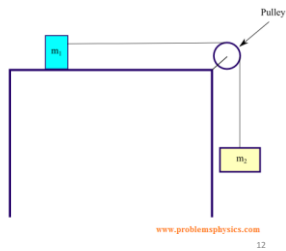
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9. Determine the acceleration.

$$m_1 = 1.0 \text{ kg}$$

$$m_2 = 2.0 \text{ kg}$$

$$(6.5 \text{ m/s}^2)$$



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