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1. Investigation: Atwood's Machine

4 Days Late Today (N14)

2. Textbook: Page 197, #29 (C15)  
Textbook: Page 200, #30-32 (C5)  
Textbook: Page 203, PP #33-34  
Textbook: Page 208, #37-45

time  $\Rightarrow$  ms  
or  
ns

4. Multiple Choice: Momentum and Impulse

5. ICA - C4, 5 and 10  $\rightarrow$  Friday, Nov. 15/13

$\leftarrow$  MC  
Prob.

6. Review Sheets - Midterm Prep - Answers Review #2 +

7. Midterm Outline

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## Physics 112/111 - Midterm Outline

- > ~~Resultant~~
- > Velocity-Time Graph ✓
- > Kinematic Problems Including Freely Falling Bodies
- > Force Problem C4 ✓
- > Force Problem C5 ✓ involve a kinematic formula.
- > Force Problem C10. ✓ involve a kinematic formula.
- > Momentum, Impulse, Momentum-Impulse Theorem ✓

FBDs

$$\vec{p} = m\vec{v}, \quad \vec{v} = \vec{F}t, \quad \vec{F}t = \Delta\vec{p}$$

$$\vec{J} = \vec{F}t = \boxed{\Delta\vec{p}} = \vec{p}_f - \vec{p}_i = m\vec{v}_f - m\vec{v}_i = m\boxed{\Delta\vec{v}}$$

\* Formula sheet will be provided.

\* Format: Problems only (6)

# Force Problems.

C4

- rest
- uniform motion (const. vel) ←
- no acc.

↓

C5

→ acc.

$$F_{\text{net}} = m\vec{a}$$

kinematic eq.  
individual forces

⇒ generally 4 forces:

$$W = mg$$

$$F_f = \mu N$$

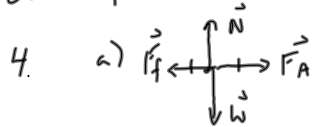
} always true.

## Review #2 - Answers.

1. a)  $0 \text{ kgm/s}$   
 b)  $1.7 \text{ kgm/s}$   
 c)  $5.7 \times 10^2 \text{ N}$

\* 2.  $\vec{a} = +3.54 \text{ m/s}^2$

3.  $\vec{v}_i = +849 \text{ m/s}$



b)  $\mu = 0.21$

5. (i) a) uniform motion  
 b) uniform motion  
 c) no motion

(ii) south

(iii)  $t = 3 \text{ s}$  and  $t = 10 \text{ s}$

6.  $\vec{v}_i = 4.0 \text{ m/s}$

7.  $\vec{F}_A = 44 \text{ N, right}$

8.  $\vec{R} = 69 \text{ N, } 34^\circ \text{ S of E or } 56^\circ \text{ E of S}$

9.  $m = 65 \text{ kg}$

10.  $\mu = 0.53$

11. 1.  $13 \text{ m/s, S}$      5.  $8.0 \text{ s}$   
 2.  $3.7 \text{ m/s}^2, \text{ N}$      6.  $3.7 \text{ m/s, S}$   
 3.  $7.5 \text{ m/s}$   
 7.  $9.4 \text{ m/s}$

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Review Prob. for Midt.

# 8.  $0.92 \text{ s}$

## Attachments

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Student ID re-takes 2013.doc