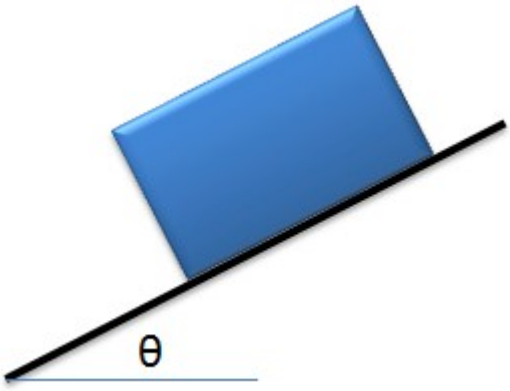
Online Homework System

Assignment Worksheet
6/16/22 - 4:05:31 PM MDT

Name: _____ **Class:**
Class #: _____ **Section #:** _____
Instructor: Parker Schnepf **Assignment:** 8.1 Homework Exercises

Question 1: (10 points)



Find angle **θ** for impending motion of the block on the inclined surface, given:
$\mathbf{W_{block}}$ = 150 *lbs*, **μ** = 0.22
(ans: **θ** = *12.4 °)*

Select problem completion status from drop-down list:
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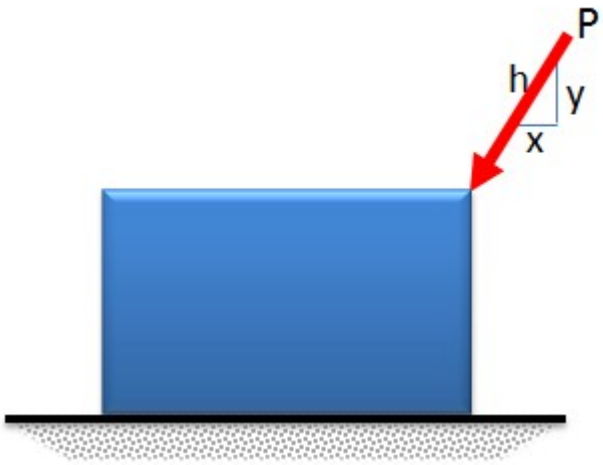
Question 2: (10 points)



A block rests on the ground. Find the friction developed between the block and the ground, given:

$\mathbf{M_{Block}}$ = 50 *kg*, **P** = 100 *N*, $\boldsymbol{\mu_S}$ = 0.25, **x**,**y**,**h** = 12,5,13

*(ans: **F** = 92.3 N, Block does not move)*

Select problem completion status from drop-down list:

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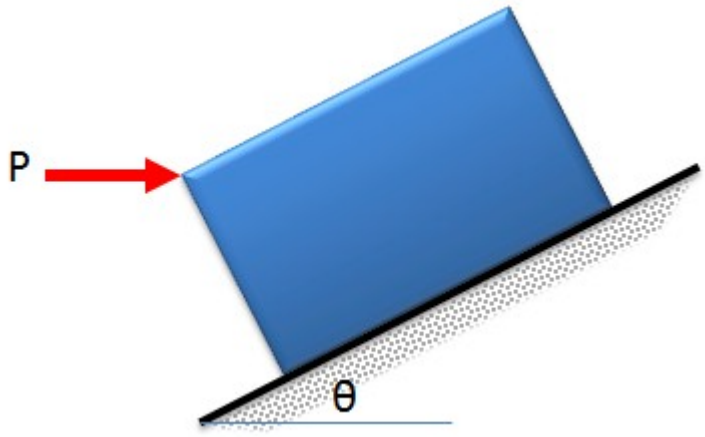
Question 3: (10 points)



Find the minimum horizontal force, **P**, necessary to keep the crate from sliding down the plane, given:

$\mathbf{W_{Block}}$ = 30 *lb*, $\boldsymbol{\mu_S}$ = 0.3, $\boldsymbol{\theta}$ = 30 °

*(ans: **P** = 7.09 lbs)*

Select problem completion status from drop-down list:

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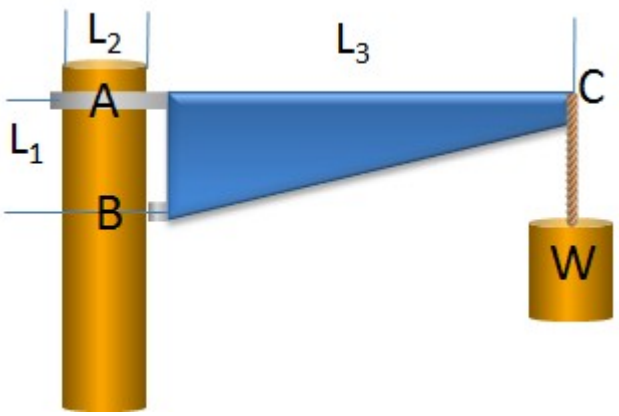
Question 4: (10 points)



Bracket **ABC** is supported at the pipe by **A** and **B**. **A** is a smooth collar that exerts only a horizontal force on the pipe. **B** exerts both a horizontal force and a friction force. Find the minimum distance, $\mathbf{L_3}$, such that the bracket can support any weight, **W**, without slipping, given:

$\mathbf{L_1}$ = 15 *in*, $\mathbf{L_2}$ = 6 *in*, $\boldsymbol{\mu}_S$ = 0.3

(ans: $\boldsymbol{L_{3\ MIN}}$ *= 50 in)*

Select problem completion status from drop-down list:

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