

COZ Block 1

Due: 11:59pm on Friday, September 10, 2010

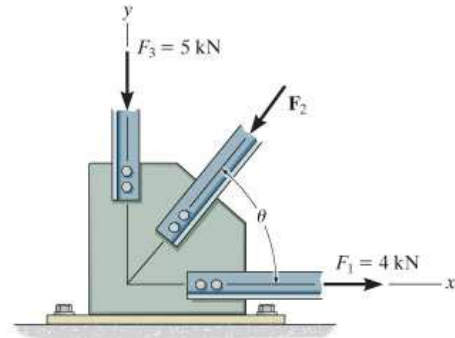
Note: You will receive no credit for late submissions. To learn more, read your instructor's [Grading Policy](#)[\[Switch to Standard Assignment View\]](#)[\[Print \]](#)

COZ Block 1 - Problem 1

Part A

If the resultant force $\mathbf{F}_R$ is directed along a line measured 84° clockwise from the positive x axis and the magnitude of $\mathbf{F}_2$ is to be a minimum, determine the magnitude of $\mathbf{F}_R$.

Express your answer with the appropriate units.



ANSWER:

 $F_R =$ Answer not displayed

Part B

Determine the magnitude of $\mathbf{F}_2$.

Express your answer with the appropriate units.

ANSWER:

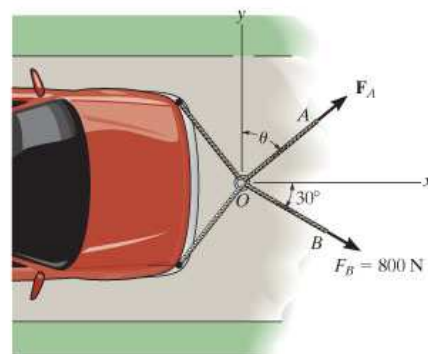
 $F_2 =$ Answer not displayed

COZ Block 1 - Problem 2

Part A

If $F_A = 840 \text{ N}$ and $\theta = 48^\circ$, determine the direction of the resultant force measured counterclockwise from the positive x axis.

Express your answer with the appropriate units.



ANSWER:

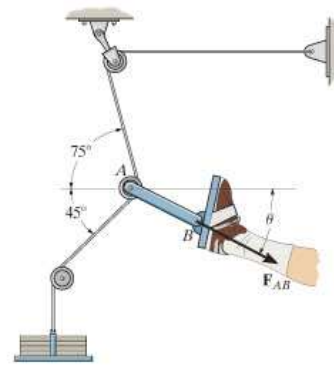
 $\alpha =$ Answer not displayed

COZ Block 1 - Problem 3

Part A

Determine the magnitude of the equilibrium force AB exerted along link AB by the tractive apparatus shown. The suspended mass is 14 kg . Neglect the size of the pulley at A .

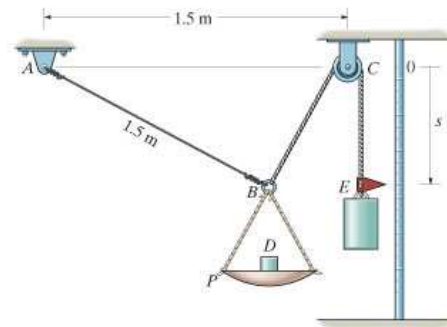
Express your answer with the appropriate units.


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ANSWER: $F_{AB} = \text{Answer not displayed}$

COZ Block 1 - Problem 4

A scale is constructed using the 6 kg mass, the 1 kg pan P , and the pulley and cord arrangement. Cord BCE is 2 m long.



Part A

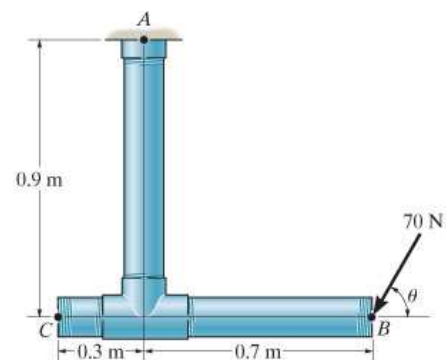
If $s = 1.15$ m, determine the mass D in the pan. Neglect the size of the pulley.

Express your answer with the appropriate units.

ANSWER: $m_D = \text{Answer not displayed}$

COZ Block 1 - Problem 5

The 70-N force acts on the end of the pipe at B .



Part A

Depending on the angle θ ($0^\circ \leq \theta \leq 180^\circ$), what is the magnitude of the largest possible moment about point A ?

Express your answer with the appropriate units.

ANSWER: $M_{\max} = \text{Answer not displayed}$

Part B

Determine the angle θ ($0^\circ \leq \theta \leq 180^\circ$) of the force that will produce minimum moment about point A .

Express your answer with the appropriate units.

ANSWER: $\theta =$ Answer not displayed

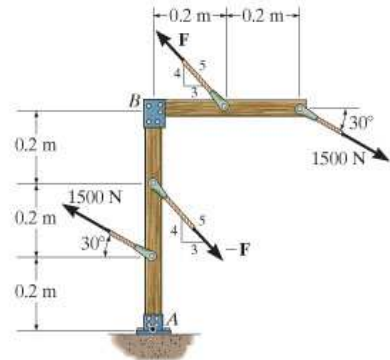
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COZ Block 1 - Problem 6

Part A

Determine the required magnitude of force $\mathbf{F}$ if the resultant couple moment on the frame is $155 \text{ N} \cdot \text{m}$, clockwise.

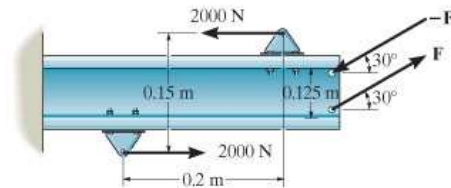
Express your answer with the appropriate units.



ANSWER: $\mathbf{F} =$ Answer not displayed

COZ Block 1 - Problem 7

Two couples act on the beam.



Part A

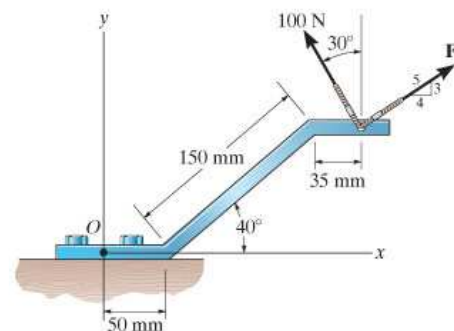
Determine the magnitude of $\mathbf{F}$ so that the resultant couple moment is $415 \text{ N} \cdot \text{m}$, counterclockwise.

Express your answer with the appropriate units.

ANSWER: $\mathbf{F} =$ Answer not displayed

COZ Block 1 - Problem 8

Replace the two forces by an equivalent resultant force $\mathbf{F}_R$ and couple moment $\mathbf{M}_{RO}$ at point O . Set $F = 91 \text{ N}$.



Part A

What is the magnitude of M_{BO} ?

Express your answer with the appropriate units.

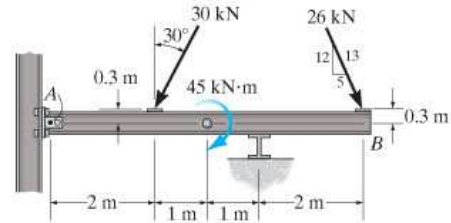
ANSWER:

$M_{BO} = \text{Answer not displayed}$

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COZ Block 1 - Problem 9

Replace the force and couple moment system acting on the overhang beam by a resultant force.



Part A

Specify its location along AB measured from point A .

Express your answer with the appropriate units.

ANSWER:

$x = \text{Answer not displayed}$

Score Summary:

Your score on this assignment is 0%.

You received 0 out of a possible total of 10 points.