## **Friction Questions from A4.3**

Use the convention that to the  $\underline{right}$  is  $\underline{positive}$ , and to the  $\underline{left}$  is  $\underline{negative}$ . Every force should be labeled "Right" or "Left", and every acceleration should be labeled as "accel" = "acceleration" (speeding up) or "decel" = "deceleration" (slowing down)

+2.43 m/s/s, decel -2.70 m/s/s, decel 10.0 N Left 32.6 N Left 39.7 N Right  b. If the box is sliding to the right, and we exert a force of 5.50 N to the right, what is the accelerating at 3.30 m/s/s, what outside force besides fric is acting on it?  d. If the box is sliding and accelerating at 4.90 m/s/s, what force must be acting on it?  d. If the box is sliding and accelerating to the left at 4.90 m/s/s, what force must be acting on it?  e. The box slides from rest to the right reaching a velocity of 14.5 m/s in a distance of 16.8 m. Woutside force was acting?  2. There is a coefficient of kinetic friction of 0.105 between a 4.75 kg block of wood and the lacel floor.  a. If there is a coefficient of kinetic friction of 0.105 between a 4.75 kg block of wood and the lacel floor.  a. If there is a force of 8.20 N to the right, and the block is sliding to the right, what is the acceleration?  b. If the block is sliding to the left, and there is a force of 2.70 N to the left, what is the acceleration?  b. If the block is sliding to the left, and there is a force of 2.70 N to the left, what is the acceleration?  c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s?  d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to the right and the block starts to slide to the right from rest, what will be to the right from rest.	on? on
b. If the box is sliding to the right, and we exert a force of 6.90 N to the left, what is the accelerating 32.6 N Left 39.7 N Right  b. If the box is sliding to the right, and we exert a force of 6.90 N to the left, what is the accelerating 32.6 N Left c. The box is sliding to the right, but is decelerating at 3.30 m/s/s, what outside force besides frict is acting on it? d. If the box is sliding and accelerating to the left at 4.90 m/s/s, what force must be acting on it? e. The box slides from rest to the right reaching a velocity of 14.5 m/s in a distance of 16.8 m. Woutside force was acting?  2. There is a coefficient of kinetic friction of 0.105 between a 4.75 kg block of wood and the laceleration. a. If there is a force of 8.20 N to the right, and the block is sliding to the right, what is the acceleration? b. If the block is sliding to the left, and there is a force of 2.70 N to the left, what is the acceleration the block? c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s? d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	on? on
32.6 N Left 39.7 N Right  c. The box is sliding to the right, but is decelerating at 3.30 m/s/s, what outside force besides fric is acting on it?  d. If the box is sliding and accelerating to the left at 4.90 m/s/s, what force must be acting on it?  e. The box slides from rest to the right reaching a velocity of 14.5 m/s in a distance of 16.8 m. Woutside force was acting?  40.696 m/s/s, accel 40.462 m/s/s, decel 40.462 m/s/s, all fthere is a force of 8.20 N to the right, and the block is sliding to the right, what is the acceleration?  b. If the block is sliding to the left, and there is a force of 2.70 N to the left, what is the acceleration the block?  c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s?  d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	on
is acting on it?  d. If the box is sliding and accelerating to the left at 4.90 m/s/s, what force must be acting on it?  e. The box slides from rest to the right reaching a velocity of 14.5 m/s in a distance of 16.8 m. W outside force was acting?  +0.696 m/s/s, accel +0.462 m/s/s, decel +0.462 m/s/s, decel 25.3 N Right 25.3 N Right 28.8 N Right +6.75 m/s  is acting on it?  d. If the box is sliding and accelerating to the left at 4.90 m/s/s, what force must be acting on it?  e. The box slides from rest to the right reaching a velocity of 14.5 m/s in a distance of 16.8 m. W outside force was acting?  2. There is a coefficient of kinetic friction of 0.105 between a 4.75 kg block of wood and the lacceleration.  a. If there is a force of 8.20 N to the right, and the block is sliding to the left, what is the acceleration the block?  b. If the block is sliding to the left, and there is a force of 2.70 N to the left, what is the acceleration the block?  c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s?  d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	
d. If the box is sliding and accelerating to the left at 4.90 m/s/s, what force must be acting on it?  e. The box slides from rest to the right reaching a velocity of 14.5 m/s in a distance of 16.8 m. W outside force was acting?  +0.696 m/s/s, accel +0.462 m/s/s, decel 25.3 N Right 25.3 N Right 28.8 N Right +6.75 m/s  d. If the block is sliding to the left, and there is a force of 2.70 N to the left, what is the acceleration the block?  c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s?  d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	at
e. The box slides from rest to the right reaching a velocity of 14.5 m/s in a distance of 16.8 m. Woutside force was acting?  +0.696 m/s/s, accel +0.462 m/s/s, decel 25.3 N Right 25.3 N Right 28.8 N Right +6.75 m/s  e. The box slides from rest to the right reaching a velocity of 14.5 m/s in a distance of 16.8 m. Woutside force was acting?  2. There is a coefficient of kinetic friction of 0.105 between a 4.75 kg block of wood and the land floor.  a. If there is a force of 8.20 N to the right, and the block is sliding to the right, what is the acceleration?  b. If the block is sliding to the left, and there is a force of 2.70 N to the left, what is the acceleration the block?  c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s?  d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	at
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outside force was acting?  +0.696 m/s/s, accel +0.462 m/s/s, decel 2. There is a coefficient of kinetic friction of 0.105 between a 4.75 kg block of wood and the land floor.  a. If there is a force of 8.20 N to the right, and the block is sliding to the right, what is the acceleration?  b. If the block is sliding to the left, and there is a force of 2.70 N to the left, what is the acceleration the block?  c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s?  d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	ı
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accel +0.462 m/s/s, decel a. If there is a force of 8.20 N to the right, and the block is sliding to the right, what is the acceleration? b. If the block is sliding to the left, and there is a force of 2.70 N to the left, what is the acceleration the block? c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s? d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	vel
+0.462 m/s/s, decel  25.3 N Right 28.8 N Right +6.75 m/s  a. If there is a force of 8.20 N to the right, and the block is sliding to the right, what is the acceleration?  b. If the block is sliding to the left, and there is a force of 2.70 N to the left, what is the acceleration the block?  c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s?  d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	
decel 25.3 N Right 28.8 N Right +6.75 m/s  acceleration?  b. If the block is sliding to the left, and there is a force of 2.70 N to the left, what is the acceleration the block?  c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s?  d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	
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28.8 N Right +6.75 m/s the block? c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s? d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	n of
+6.75 m/s c. What applied force would make the block accelerate and slide to the right at 4.30 m/s/s? d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	
d. If the block is sliding to the left, but is decelerating at 7.10 m/s/s, what force must be applied to	
	it?
velocity in 8.00 seconds?	
-1.48 m/s/s, decel 3. There is a coefficient of kinetic friction of 0.310 between an 8.35 kg block of wood and the	
-4.53 m/s/s, decel   level floor.	
2.01 N Left a. If the block is sliding to the right, and there is a force of 13.0 N to the right, what is the	
36.1 N Left acceleration?	
72.4 N Right b. If the block is sliding to the right, but there is a force of 12.4 N to the left, what is the accelerate	nn?
c. If the block is sliding to the left, but is decelerating at 2.80 m/s/s, what outside force must be ac	
d. If the block is sliding to the right, but is decelerating at 2.36 m/s/s, what is the force acting on t	
block?	
e. From rest the block reaches a speed of 15.0 m/s to the right from rest in a distance of 20.0 m. V	hat '
force was acting?	mai
-2.87 m/s/s, decel 4. There is a coefficient of kinetic friction of 0.155 between a 3.10 kg block of wood and the	vol
-0.518 m/s/s, accel floor.	VEI
+18.5 N Right   a. If the block is sliding to the right, and you exert a force of 4.19 N to the left, what is the	
10.1 N Left acceleration?	
13.7 N Left b. If the block is sliding to the left, and you exert a force of 6.32 N to the left, what is the acceleration.	ion?
c. If the block is sliding and accelerating to the right at 4.45 m/s/s, what force must be applied?	.OII :
d. If the block is sliding to the left and accelerating to the left at 1.75 m/s/s, what force must be	
applied?	
e. The block displaces itself to the left 12.0 m from rest in 2.87 s. What force must have acted?	
+0.780 m/s/s, 5. There is a coefficient of kinetic friction of 0.235 between an 8.85 kg box and the level floor	$\longrightarrow$
decel a. If the box is sliding to the left, and there is a force of 13.5 N to the left, what is the acceleration	
+1.62 m/s/s, accel b. If the box is accelerating to the right, and there is a force of 34.7 N to the right, what is the acceleration?	
8.99 N Left c. If the box is sliding to the right, but is decelerating at 6.50 m/s/s, what force must be acting on the state of the sta	ie
+10.9 m/s box?	tha
d. If the box is sliding to the left, but is decelerating at 1.29 m/s/s, what must be the force acting of hou?	ıne
box?	
e. If the box is sliding to the right, and there is a force of 32.0 N to the right, what will be its final	
velocity from rest when is has gone 45.0 m?	1