Self Check 2.5

Due No due date Po

Points 6

Questions 6

Time limit None

Allowed attempts Unlimited

Instructions



This exercise will help you check your knowledge. Please take it as many times as you need to master the concepts. Select the best answer for each question.

Take the quiz again

Attempt history

	Attempt	Time	Score
KEPT	Attempt 2	1 minute	6 out of 6
LATEST	Attempt 2	1 minute	6 out of 6
	Attempt 1	less than 1 minute	0 out of 6

() Correct answers are hidden.

Score for this attempt: **6** out of 6 Submitted 21 Mar 2019 at 10:12 This attempt took 1 minute.

> Use the following scenario to answer the following three questions. Students perform an experiment. In trial 1, a 10 N horizontal force acts on a 20 kg cart on a level, frictionless track. Something is changed in each

additional trial. State whether the acceleration will be greater than, less than, or equal to trial 1.



Question 2 1/1 pts In trial 2, the mass of the cart is changed to 10 kg, and the force is kept the same (10 N). How does the acceleration in trial 2 compare to trial 1? acceleration in trial 2 = acceleration in trial 1 acceleration in trial 2 > acceleration in trial 1 acceleration in trial 2 < acceleration in trial 1</td>

Feedback: trial 2 > trial 1 (a2 = 1 m/s²) > (a1 = 0.5 m/s²) (One way to figure out questions 1-3 is to actually find the acceleration in each trial and just compare them. Another way is to do it by understanding the relationship between force, mass, and acceleration from Newton's second law: $\Sigma Fx = m \cdot a$. Rearranging this equation, we see that the acceleration equals the net force divided by the mass. So increasing the force will increase the acceleration, while increasing the mass will cause a decrease in the acceleration.)



Feedback: trial 4 = trial 1 (a4 = 0.5 m/s^2) = (a1 = 0.5 m/s^2)

Question 4 1/1 pts A 60 kg box is at rest on the floor. You push it with 80 N of force at a 25° angle above the horizontal. If there is a 15 N frictional force, what is the

	0.834 m/s²
	0.958 m/s²
	0.57 m/s²
	1.08 m/s ²
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Question 5	1 / 1 pts
You exert a 95 N force on a 30 kg box. If there is a frictional what is the acceleration of the box?	force of 50 N,
○ 158.3 m/s²	
1.5 m/s ²	
○ 1.3 m/s²	
○ 4.83 m/s²	

Feedback: F - Ff = m · a 95 - 50 = 30 · a 45 = 30 · a a = 1.5 m/s²

Question 6	1 / 1 pts
A 60 kg box is at rest on the floor. You push it with 8 right. As a result, it accelerates at 1 m/s². How much	0 N of force to the friction is present?
20 N	
14 N	
0 60 N	
0 80 N	
Feedback:	
Step 1: Draw a free-body diagram.	
Step 2: $\Sigma F X = M \cdot a$ Step 3: E Ef = m · a	
Step 3. $r = rr = m^2 a$ Step 4: 80 - Ff = (60)(1)	
80 - Ff = 60	
Ff = 20 N	

Quiz score: 6 out of 6