Average Speed on a Trip
001 (part 1 of 2) 10.0 points
A person travels by car from one city to another. She drives for 26 min at 69.4 km/h, 9.7 min at 87 km/h, 44.8 min at 47.5 km/h, and spends 19.4 min along the way eating lunch and buying gas.
Determine the distance between the cities along this route.
Answer in km.

002 (part 2 of 2) 10.0 points
Determine the average speed for the trip.
Answer in km/h.

Holt SF 03Rev 60
003  10.0 points
The eye of a hurricane passes over Grand Bahama Island. It is moving in a direction 52.3° north of west with a speed of 41.8 km/h. Exactly 3.00 hours later, the course of the hurricane shifts due north, and its speed slows to 25.2 km/h, as shown.
How far from Grand Bahama is the hurricane 5.25 h after it passes over the island?
Correct answer: 173.757 km.

Serway CP 04 07
004  10.0 points
Then air exerts a forward force of 11 N on the propeller of a 0.29 kg model airplane.
If the plane accelerates forward at 2 m/s², what is the magnitude of the resistive force exerted by the air on the airplane?
Correct answer: 10.42 N.

Serway CP 04 62
005 (part 1 of 3) 10.0 points
Three masses are connected by light strings as shown in the figure.

The string connecting the $m_1$ and the $m_2$ passes over a light frictionless pulley.
Given $m_1 = 2.98 \text{ kg}$, $m_2 = 3.69 \text{ kg}$, $m_3 = 1.27 \text{ kg}$, and $g = 9.8 \text{ m/s}^2$. The acceleration of gravity is $9.8 \text{ m/s}^2$.
Find the downward acceleration of $m_2$ mass.
Correct answer: $2.44383 \text{ m/s}^2$.

006 (part 2 of 3) 10.0 points
Find the tension in the string connecting the $m_1$ and the $m_2$ masses.
Correct answer: 36.4866 N.

007 (part 3 of 3) 10.0 points
Find the tension in the string connecting the $m_2$ and the $m_3$ masses.
Correct answer: 9.34234 N.

Pulling Two Blocks 03
008 (part 1 of 4) 10.0 points
Two blocks on a frictionless horizontal surface are connected by a light string.
The acceleration of gravity is $9.8 \text{ m/s}^2$.

Find the acceleration of the system.
Correct answer: $1.72823 \text{ m/s}^2$.

009 (part 2 of 4) 10.0 points
What is the tension in the string between the blocks?

Correct answer: 16.7811 N.

010 (part 3 of 4) 10.0 points
If the surface were frictional, and the coefficient of kinetic friction between each block and the surface is 0.117, what would be the new acceleration?

Correct answer: 0.581628 m/s².

011 (part 4 of 4) 10.0 points
What would be the new tension in the string between the blocks?

Correct answer: 16.7811 N.

Forces Accelerating a Block
012 10.0 points
The magnitude of each force is 290 N, the force on the right is applied at an angle 24° and the mass of the block is 17 kg. The coefficient of friction is 0.293.

The acceleration of gravity is 9.8 m/s².

What is the magnitude of the resulting acceleration?

Correct answer: 31.8044 m/s².