+1/1/60+

PHY 171 **Exam 1** **Fall 2018**

Name:

Question 1 A week contains approximately

- [ ] 6.05×10^5 s
- [ ] 2.6×10^5 s
- [ ] 2.6×10^6 s
- [ ] 1×10^4 s
- [ ] 6.05×10^4 s

Question 2 A ship travels 200 km to the south and then 400 km to the west. The ship's displacement from its starting point is

- [ ] 200 km
- [ ] 350 km
- [ ] 400 km
- [ ] 600 km
- [ ] 450 km

Question 3 A racehorse accelerates from rest to a velocity of 15.6 m/s in 2.10 s. What is the average acceleration?

- [ ] 7.43 m/s^2
- [ ] 6.95 m/s
- [ ] 32.8 m/s^2
- [ ] 7.43 m/s
- [ ] 8.33 m/s^2

Question 4 A jogger runs down a straight road with an average velocity of 3.5 m/s for 4.00 minutes. What is her final position if her initial position was zero.

- [ ] 14.5 m
- [ ] 840 m
- [ ] 860 m
- [ ] 875 m
- [ ] 14 m

Question 5 Add the vector A with magnitude 30 and direction 60° to the vector B with magnitude 15 and direction 135°.

- [ ] 36.8 direction 6.85°
- [ ] 39.5 direction 83.4°
- [ ] 45 direction 97.5°
- [ ] 43.6 direction 6.85°
- [ ] 36.8 direction 83.2°

Question 6 Leah Pritchett piloted her NHRA top fuel dragsters with an average acceleration of 40.6 m/s^2. She accelerated from rest at this rate for 3.640 s. How far did she travel in this time?

- [ ] 387 m
- [ ] 458 m
- [ ] 148 m
- [ ] 538 m
- [ ] 269 m

Question 7 An active volcano ejects a large rock with a speed of 35.0 m/s at an angle of 62.8° above the horizontal. The rock strikes the ground at an elevation 15.0 m lower than its starting point. Calculate the time it takes the rock to follow this path.

- [ ] 3.60 s
- [ ] 2.58 s
- [ ] 6.80 s
- [ ] 4.03 s
- [ ] 5.83 s

Question 8 What is the magnitude and direction of the rock's velocity at impact?

- [ ] 38.95 m/s 65.7°
- [ ] 35.5 m/s −65.7°
- [ ] 16.0 m/s 24.3°
- [ ] -35.5 m/s 65.7°
- [ ] 38.95 m/s −65.7°

Question 9 Suppose the net external force exerted on a lawn mower if 73 N parallel to ground. he mass of the mower is 50 kg. What is the acceleration?

- [ ] 1.09 m/s
- [ ] 1.46 m/s^2
- [ ] 0.685 m/s^2
- [ ] 2.15 m/s^2
- [ ] 0.685 m/s

Question 10 A balttleship fires two shell at the same time towards the enemy ships. If the shells follow the parabolic trajectories shown, which ship get hit first?

- ☐ They will be hit at the same time
- ☐ Ship B
- ☐ Need more information
- ☐ Ship A

Question 11 A rocket sled with a 5-rocket propulsion system has a mass of 2300 kg. The sled's initial acceleration is 53 m/s^2. The force of friction opposing the motion is known to be 5780 N. What is the magnitude of force exerted, called thrust, by each of the five rockets?

- ☐ 2.55×10^4 N
- ☐ 2.44×10^4 N
- ☐ 2.32×10^4 N
- ☐ 1.22×10^5 N
- ☐ 1.27×10^5 N

Question 12 Draw a free body diagram for the rocket sled from the previous problem.

☐w ☐p ☐m ☐c

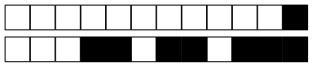
Question 13 Suppose a 120 kg wooden crate is resting on a wood floor. What is the maximum force you can exert horizontally on the crate without moving it? For wood on wood $\mu_s = 0.5$ and $\mu_k = 0.3$.

☐ **w** ☐ **p** ☐ **m** ☐ **c**

Question 14 If you continue to exert this force and the crate starts to slip, what will be the magintude of the acceleration?

- ☐ 1.86 m/s^2
- ☐ 5.36 m/s^2
- ☐ 3.14 m/s^2
- ☐ 1.96 m/s^2
- ☐ 2.14 m/s^2

Question 15 A skier with a mass of 75 kg is sliding down a snowy slope. The slope makes a 30° angle with the horizontal. What is the normal force on teh skier? ☐**w** ☐**p** ☐**m** ☐**c**



+1/6/55+

For your examination, preferably print documents compiled from auto-multiple-choice.