



McRoberts Secondary

Vectors Quiz 2025-11-05



Personal Data

Family Name:
Given Name:
Signature:
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Registration Number

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In this section **no** changes or modifications must be made!

Scrambling

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Type

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Exam ID(Physics 11)

25110500001

Please mark the boxes carefully: ☒ Not marked: ☐ or ☐

This document is scanned automatically. Please keep clean and do not bend or fold. For filling in the document please use a **blue or black pen**.

Only clearly marked and positionally accurate crosses will be processed!

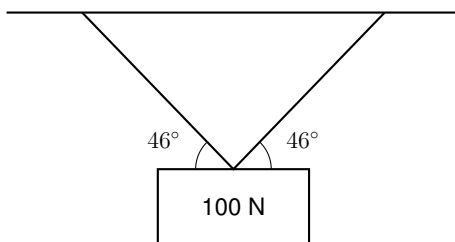
Answers 1 - 12

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	a	b	c	d



1. True or false? The normal force on an object of mass M at rest on an inclined plane is less than Mg . Assume that the plane is inclined at a positive acute angle and that only gravity and the normal force act on the object.
 - a. True
 - b. False
2. A student puts two objects on a physics book and carefully tilts the cover. At a small angle, object A starts to slide. At a larger angle, object B starts to slide. Which has the greater coefficient of static friction with the book cover?
 - a. Object A
 - b. Object B
3. True or false? If an object is in equilibrium (i.e. all the forces on it are balanced), then the object must be at rest.
 - a. True
 - b. False
4. Xavier pulls on a box with 47.0 N of force at 0° . Yuri pulls on the the same box with 23.0 N of force, at 90° . What is the angle of the net force?
 - a. 27.2°
 - b. 56.7°
 - c. 68.3°
 - d. 26.0°
5. Adam pulls on a box with 8.0 N of force. Bob pulls on the the same box with 14.0 N of force, at a right angle to Adam's force. What is the magnitude of the net force on the box?
 - a. 6 N
 - b. 22 N
 - c. 16.1 N
 - d. 19.4 N
6. Carly pulls on a box with 15.0 N of force. Debby pulls on the the same box at a right angle to Carly. How hard must Debby pull to make the resultant force on the box 18.0 N?
 - a. 9.9 N
 - b. 33.0 N
 - c. 5.1 N
 - d. 6.4 N
7. Charlie pulls on a box with 15.0 N of force at -10° . Dan pulls on the the same box with 11.0 N of force at 39° . What is the angle of the net force on the box?
 - a. -111.6°
 - b. 10.5°
 - c. -110.5°
 - d. 159.6°
8. Two forces act on an object. A 45-N force acts at 0° and a 43-N force acts at 90° . What is the magnitude of the equilibrant?
 - a. 82.2 N
 - b. 70.1 N
 - c. 62.2 N
 - d. 90.7 N

9. Two forces act on an object. A 75.0-N force acts at 148° . A 65.0-N force acts at 149° . What is the angle of their equilibrant?
- 5.1°
 - -139.2°
 - -31.5°
 - -122.5°
10. Two forces have magnitudes of 5 N and 7 N, respectively. When these two forces are added, the magnitude of the sum
- could be any value between 2 N and 12 N (inclusive)
 - could be any value
 - must be either 2 N or 12 N
 - must be 12 N
11. A sign that weighs 100 N is supported by two ropes that each make 46° angles with the horizontal. The sign is not moving. What is the magnitude of the force exerted by each rope?



- 46.6 N
 - 69.5 N
 - 60.8 N
 - 53.9 N
12. Robert pulls on a box with 25.0 N of force at 121° . Steve pulls on the the same box with 83.0 N of force at 98° . What is the magnitude of the net force on the box?
- 126.2 N
 - 106 N
 - 142.1 N
 - 136.3 N