

# McRoberts Secondary

Vectors Quiz 2025-11-05



## Personal Data

Family Name:

Given Name:

Signature:

checked

## Registration Number

--	--	--	--	--	--	--	--

0	<input type="checkbox"/>	0					
1	<input type="checkbox"/>	1					
2	<input type="checkbox"/>	2					
3	<input type="checkbox"/>	3					
4	<input type="checkbox"/>	4					
5	<input type="checkbox"/>	5					
6	<input type="checkbox"/>	6					
7	<input type="checkbox"/>	7					
8	<input type="checkbox"/>	8					
9	<input type="checkbox"/>	9					

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

## Scrambling

0 0

Type  
012

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

a b c d

- |    |                          |                          |                          |                          |
|----|--------------------------|--------------------------|--------------------------|--------------------------|
| 1  | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
| 2  | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
| 3  | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
| 4  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
- 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  $0^\circ$ . Yuri pulls on the the same box with 23.0 N of force, at  $90^\circ$ . What is the angle of the net force?
  - a.  $27.2^\circ$
  - b.  $56.7^\circ$
  - c.  $68.3^\circ$
  - d.  $26.0^\circ$
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  $-10^\circ$ . Dan pulls on the the same box with 11.0 N of force at  $39^\circ$ . What is the angle of the net force on the box?
  - a.  $-111.6^\circ$
  - b.  $10.5^\circ$
  - c.  $-110.5^\circ$
  - d.  $159.6^\circ$
8. Two forces act on an object. A 45-N force acts at  $0^\circ$  and a 43-N force acts at  $90^\circ$ . What is the magnitude of the equilibrant?
  - a. 82.2 N
  - b. 70.1 N
  - c. 62.2 N
  - d. 90.7 N

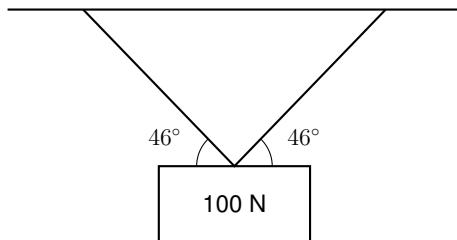
9. Two forces act on an object. A 75.0-N force acts at  $148^\circ$ . A 65.0-N force acts at  $149^\circ$ . What is the angle of their equilibrant?

- a.  $5.1^\circ$
- b.  $-139.2^\circ$
- c.  $-31.5^\circ$
- d.  $-122.5^\circ$

10. Two forces have magnitudes of 5 N and 7 N, respectively. When these two forces are added, the magnitude of the sum

- a. could be any value between 2 N and 12 N (inclusive)
- b. could be any value
- c. must be either 2 N or 12 N
- d. must be 12 N

11. A sign that weighs 100 N is supported by two ropes that each make  $46^\circ$  angles with the horizontal. The sign is not moving. What is the magnitude of the force exerted by each rope?



- a. 46.6 N
- b. 69.5 N
- c. 60.8 N
- d. 53.9 N

12. Robert pulls on a box with 25.0 N of force at  $121^\circ$ . Steve pulls on the same box with 83.0 N of force at  $98^\circ$ . What is the magnitude of the net force on the box?

- a. 126.2 N
- b. 106 N
- c. 142.1 N
- d. 136.3 N