

## 2016 AUSTRALIAN SCIENCE OLYMPIAD EXAM

### PHYSICS – ANSWER BOOKLET FOR SECTION B

TO BE COMPLETED BY THE STUDENT. USE CAPITAL LETTERS.

**Student Name:** .....

**Home Address:** .....  
..... **Post Code:** .....

**Telephone:** (.....) ..... **Mobile:** .....

**E-Mail:** ..... **Date of Birth:** ...../...../.....

☐ Male ☐ Female ☐ Unspecified      **Year 10** ☐ **Year 11** ☐ **Other:** .....

**Name of School:** ..... **State:** .....

To be eligible for selection for the Australian Science Olympiad Summer School, students must be able to hold an Australian passport by the time of team selection (January 2017).

If you do not complete your contact details above it may not be possible for you to get an offer of a place at the Australian Science Olympiad Summer School.

The Australian Olympiad teams in Biology, Chemistry, Earth and Environmental Science and Physics will be selected from students participating in the Australian Science Olympiad Science Summer School.

Please note - students in Year 12 in 2016 are not eligible to attend the 2017 Australian Science Olympiad Summer School.

☐ **I am an Australian public high school student and would like to be considered for the Australian Science Olympiad Summer School Scholarship.**

Data is collected solely for the purpose of Science Summer School offers.

To view the privacy policy:

[www.asi.edu.au](http://www.asi.edu.au)

#### Examiners' Use Only:

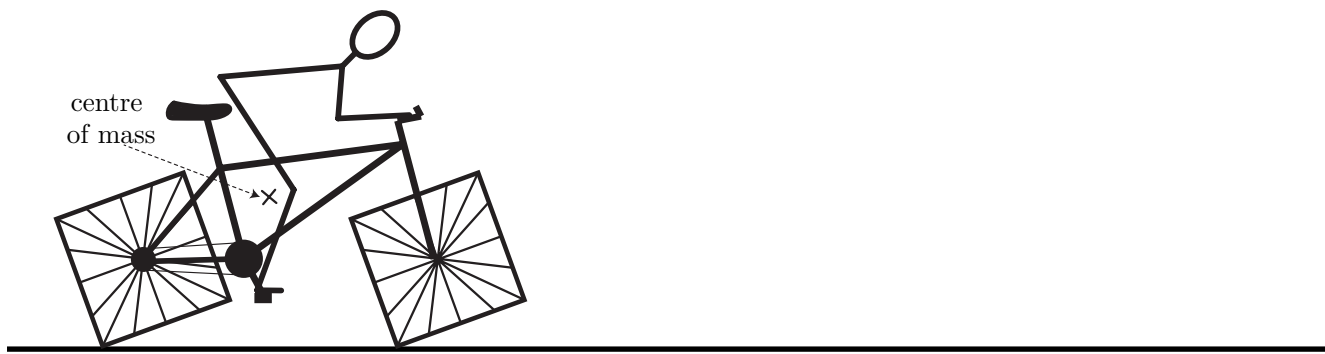
11	12	13	14	T

## Question 11

## Question 11

## Question 12

12 a) diagram



12 a)(ii) explanation

12 a)(iv) explanation

12 b)

## Question 12

12 c)

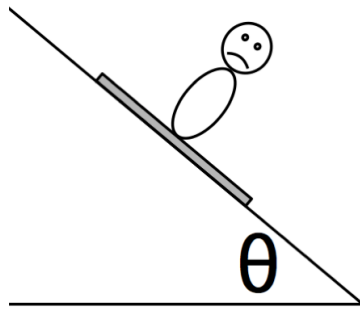
12 d)

### Question 13

13 a)(i)

13 a)(ii)

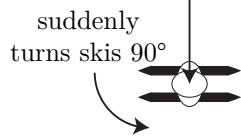
13 b)



13 c)

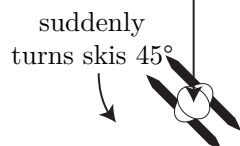
### Question 13

13 d)(i) Joshua  
skiing  
downhill



13 d)(ii)

13 e) Joshua  
skiing  
downhill



14 a) Question 14

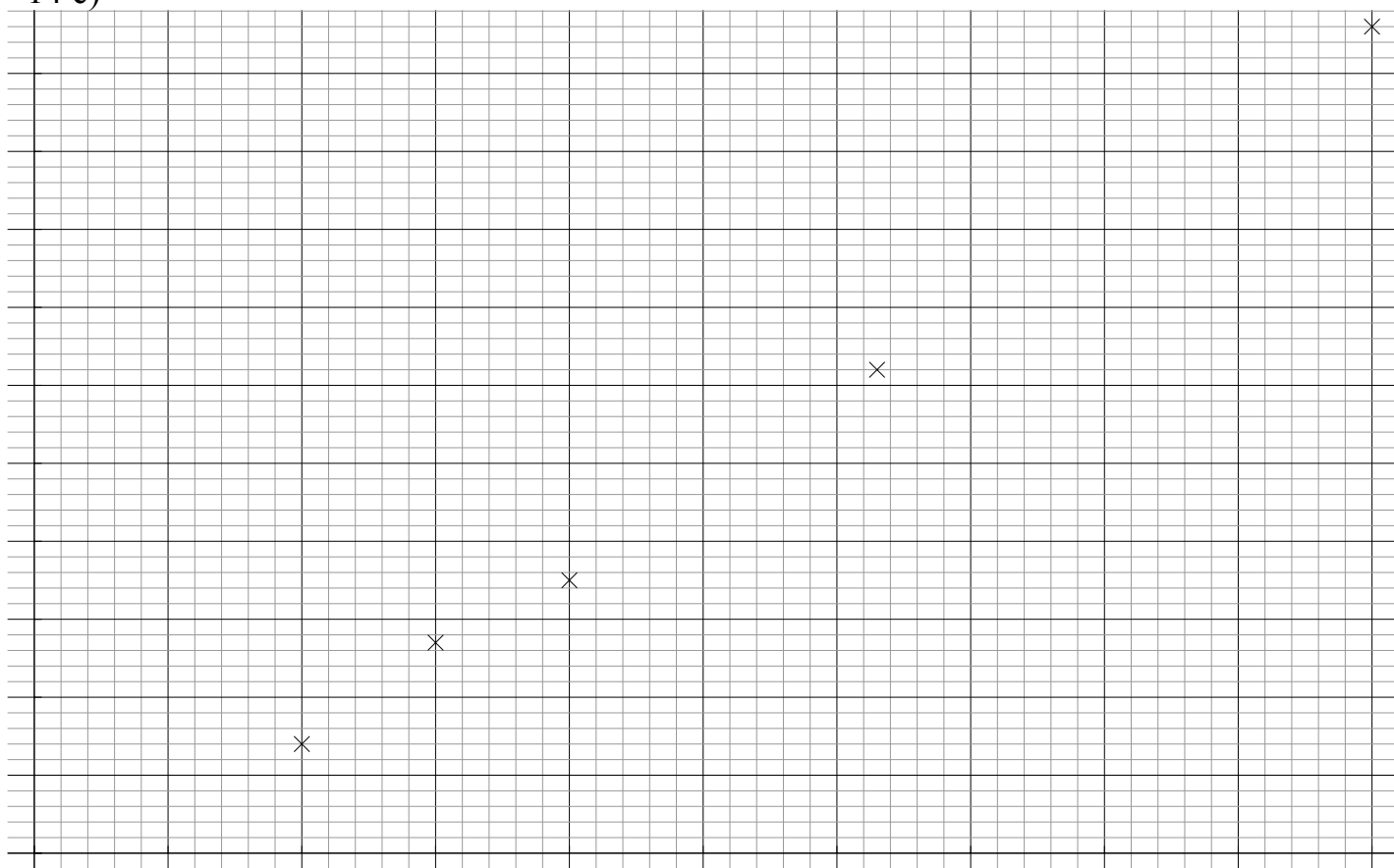
14 b)

Tempo (beats per minute)		$y$ (mm)
40		
60		
80		
126		
200		



## Question 14

14 c)



14 d)

14 e)

14 f)

Question Number: \_\_\_\_\_

Question Number: \_\_\_\_\_

Question Number: \_\_\_\_\_

***Integrity of Competition***

*If there is evidence of collusion or other academic dishonesty, students will be disqualified. Markers' decisions are final.*