

# Reasoning OA

Click on a question number to see how your answers were marked and, where available, full solutions.

Question Number	Score
Question 1	
Question 2	
Total	5 / 5 (100%)

## Performance Summary

Exam Name:	Reasoning OA
Session ID:	15432741906
Student's Name:	Makolo, Daniella (dom10)
Exam Start:	Tue Oct 10 2023 19:12:08
Exam Stop:	Tue Oct 10 2023 19:16:22
Time Spent:	0:04:14

## Question 1

Translate the following propositions from informal notation to formal notation.  
Make it clear what each propositional letter stands for.

Informal notation:

if  $x * y$  is odd or  $y$  is even then  $x$  is even.

Formal notation:

☐  $P \Rightarrow (Q \wedge R)$     ☐  $P \Rightarrow (Q \vee R)$     ☐  $(P \wedge Q) \Rightarrow R$     ☒  $(P \vee Q) \Rightarrow R$



, where

$P =$

☐  $x$  is even    ☐  $x$  is odd    ☐  $y$  is even    ☐  $y$  is odd    ☐  $x+y$  is even    ☐  $x+y$  is odd    ☐  $x * y$  is even

☒  $x * y$  is odd



,

$Q =$

☐  $x$  is even    ☐  $x$  is odd    ☒  $y$  is even    ☐  $y$  is odd    ☐  $x+y$  is even    ☐  $x+y$  is odd    ☐  $x * y$  is even

☐  $x * y$  is odd



and  $R =$

☒  $x$  is even    ☐  $x$  is odd    ☐  $y$  is even    ☐  $y$  is odd    ☐  $x+y$  is even    ☐  $x+y$  is odd    ☐  $x * y$  is even

☐  $x * y$  is odd



**Gap 0**

✓ You chose a correct answer. You were awarded **1** mark.

**Gap 1**

✓ You chose a correct answer. You were awarded **1** mark.

**Gap 2**

✓ You chose a correct answer. You were awarded **1** mark.

**Gap 3**

✓ You chose a correct answer. You were awarded **1** mark.

You scored **4** marks for this part.

Score: 4/4 ✓

## Question 2

Determine if the following statement is true or false for all integers  $x$  and  $y$ .

$$P \Rightarrow (\neg Q \wedge \neg R)$$

with

$P$  stands for "  $x*y$  is even "

$Q$  stands for "  $y$  is odd "

$R$  stands for "  $x$  is odd "

The proposition above is  ✓.

✓ You chose a correct answer. You were awarded **1** mark.

You scored **1** mark for this part.

Score: 1/1 ✓