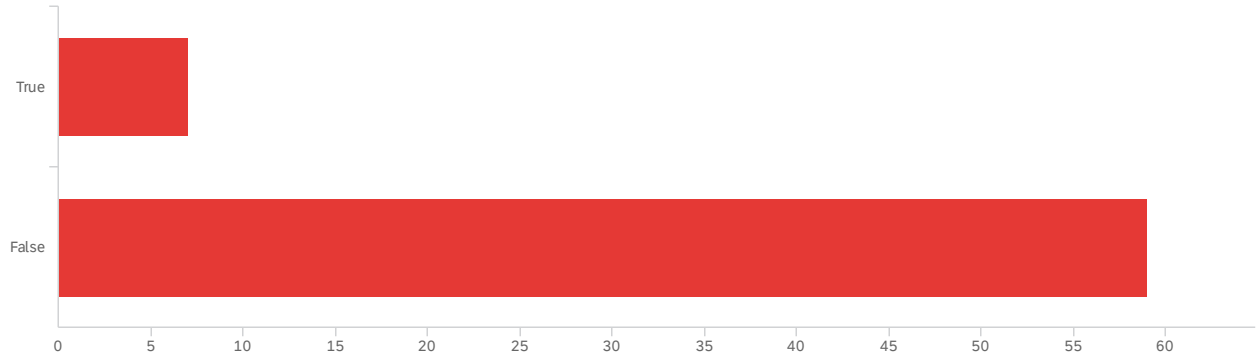
# Survey Report 2

*Ordinals*

June 20, 2022 6:01 PM CEST

## Q20 - True or false: ω + 1 = ω + 2

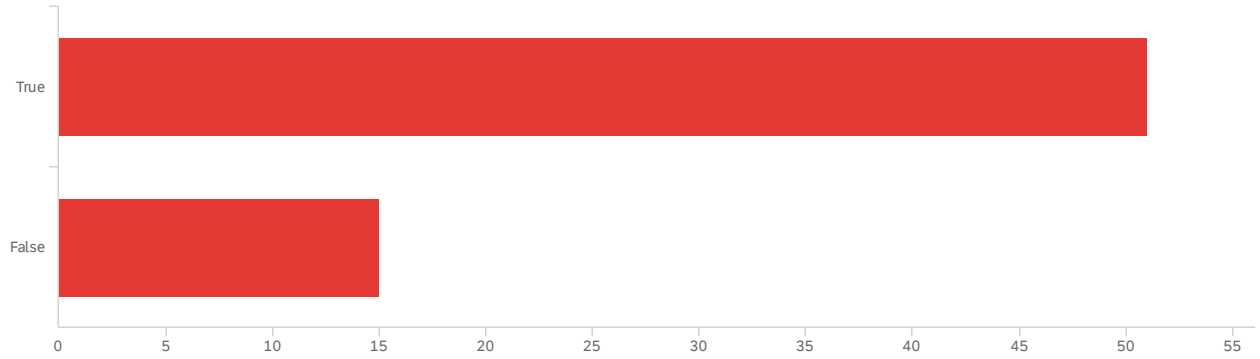



| # | Field | Minimum | Maximum | Mean | Std Deviation | Variance | Count |
|---|---|---|---|---|---|---|---|
| 1 | True or false: ω + 1 = ω + 2 | 1.00 | 2.00 | 1.89 | 0.31 | 0.09 | 66 |

| # | Field | | Choice Count |
|---|---|---|---|
| 1 | True | 10.61% | 7 |
| 2 | False | 89.39% | 59 |
| | | | 66 |

Showing rows 1 - 3 of 3

# Q24 - True or false: 412 + ω = ω

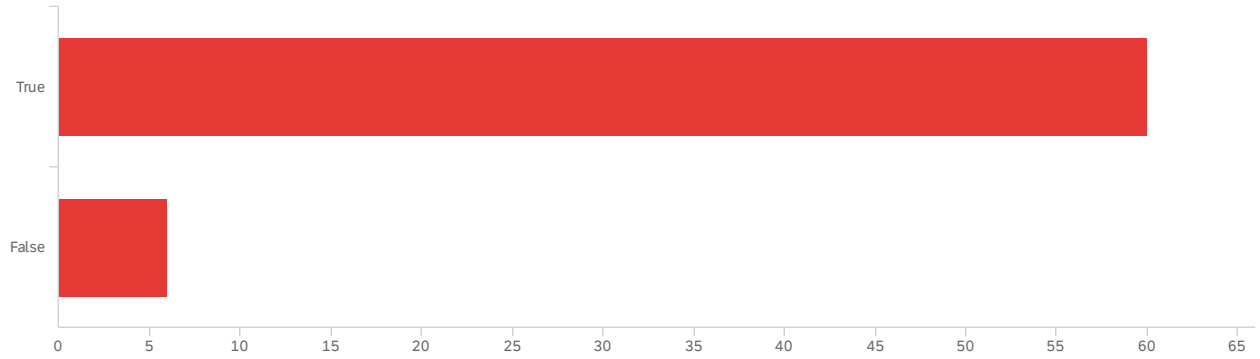



| # | Field | Minimum | Maximum | Mean | Std Deviation | Variance | Count |
|---|---|---|---|---|---|---|---|
| 1 | True or false: 412 + ω = ω | 1.00 | 2.00 | 1.23 | 0.42 | 0.18 | 66 |

| # | Field | | Choice Count |
|---|---|---|---|
| 1 | True | 77.27% | 51 |
| 2 | False | 22.73% | 15 |
| | | | 66 |

Showing rows 1 - 3 of 3

# Q25 - True or false: For an ordinal number α < ω (i.e., a finite ordinal), 5 * α = α * 5

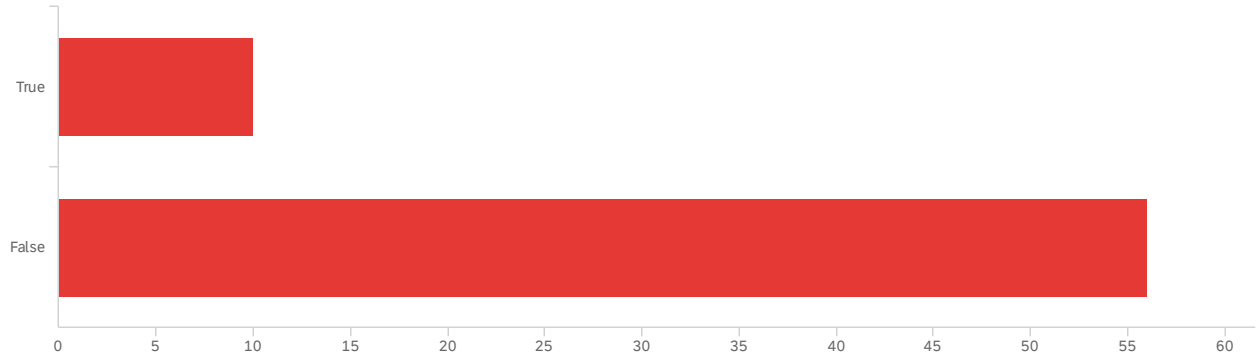



| # | Field | Minimum | Maximum | Mean | Std Deviation | Variance | Count |
|---|---|---|---|---|---|---|---|
| 1 | True or false: For an ordinal number α < ω (i.e., a finite ordinal), 5 * α = α * 5 | 1.00 | 2.00 | 1.09 | 0.29 | 0.08 | 66 |

| # | Field | | Choice Count |
|---|---|---|---|
| 1 | True | 90.91% | 60 |
| 2 | False | 9.09% | 6 |
| | | | 66 |

Showing rows 1 - 3 of 3

# Q27 - True or false: 5 * ω = ω * 5

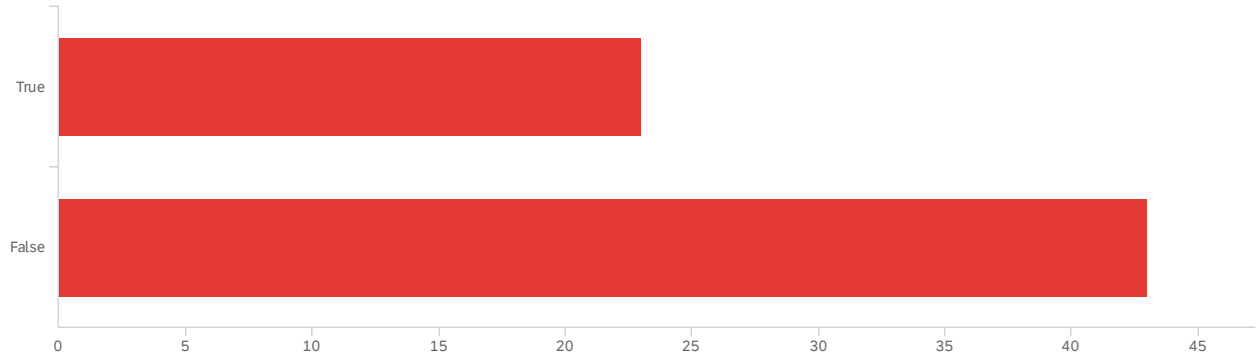



| # | Field | Minimum | Maximum | Mean | Std Deviation | Variance | Count |
|---|---|---|---|---|---|---|---|
| 1 | True or false: 5 * ω = ω * 5 | 1.00 | 2.00 | 1.85 | 0.36 | 0.13 | 66 |

| # | Field | | Choice Count |
|---|---|---|---|
| 1 | True | 15.15% | 10 |
| 2 | False | 84.85% | 56 |
| | | | 66 |

Showing rows 1 - 3 of 3

## Q31 - True or false: 4 * ω = (1 + 1 + 1 + 1) * ω = 1 * ω + 1 * ω + 1 * ω + 1 * ω = ω + ω + ω + ω

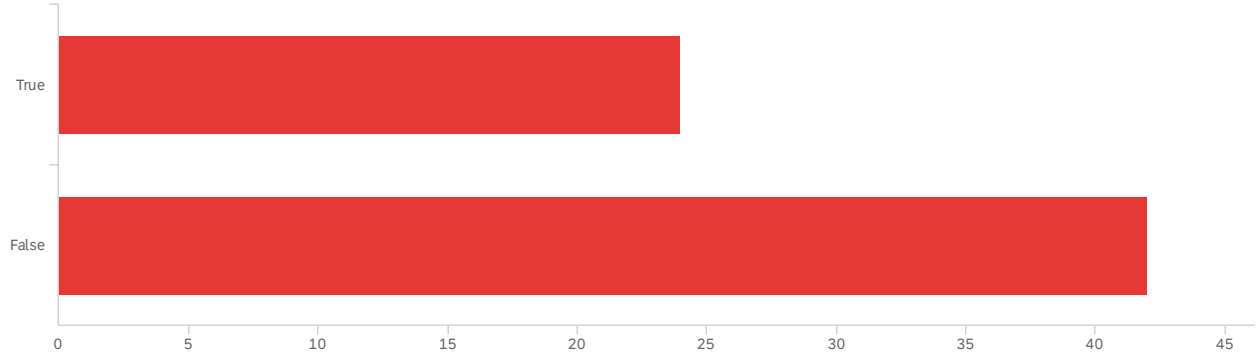



| # | Field | Minimum | Maximum | Mean | Std Deviation | Variance | Count |
|---|---|---|---|---|---|---|---|
| 1 | True or false: 4 * ω = (1 + 1 + 1 + 1) * ω = 1 * ω + 1 * ω + 1 * ω + 1 * ω = ω + ω + ω + ω | 1.00 | 2.00 | 1.65 | 0.48 | 0.23 | 66 |

| # | Field | | Choice Count |
|---|---|---|---|
| 1 | True | 34.85% | 23 |
| 2 | False | 65.15% | 43 |
| | | | 66 |

Showing rows 1 - 3 of 3

# Q49 - True or false: Every ordinal number has a predecessor




| # | Field | Minimum | Maximum | Mean | Std Deviation | Variance | Count |
|---|---|---|---|---|---|---|---|
| 1 | True or false: Every ordinal number has a predecessor | 17.00 | 18.00 | 17.64 | 0.48 | 0.23 | 66 |

| # | Field | | Choice Count |
|---|---|---|---|
| 17 | True | 36.36% | 24 |
| 18 | False | 63.64% | 42 |
| | | | 66 |

Showing rows 1 - 3 of 3

# Q51 - If you answered 'No' in the previous question, please provide an example of such ordinal

If you answered 'No' in the previous question, please provide an example of...

If V{0,1,2,...} Then 0 have no predecessor

I'm a bit unsure of this one as you defined ordinals to be natural numbers. Hence 0 would not be an ordinal as it is not a natural number. Meaning that the ordinal 1 would not have a predecessor. However, all sets were defined to have a 0th place just like in computer science. If 0 is in fact an ordinal, which to my understanding it shouldn't, it's just a place name within a set, then it can be said that it is an ordinal without a predecessor as -1 is definitely not possible.

?

0

0

0 if without negatives

-

0

1

0

0

1

0

0

0

0

0

ω

0

0

If you answered 'No' in the previous question, please provide an example of...

Omega

the first one - 0 (matching to the empty set. or in some definitions, 1)

W

0

0

ω

0

0

Omega. There exists no ordinal number k such that k+1 = omega

ω

0

0

0, assuming zero is an ordinal and negative integers are not

0

0 hasnt have a predecessor

1

omega

0

w

Omega

Omega

0

## Q32 - Please type your answer in the box below: Express the number 5 in terms of successors of 0 [Hint: 8 = S(S(6))]

Please type your answer in the box below: Express the number 5 in terms of...

6

S(S(S(S(S(0)))))

5=S(S(S(S(S(0)

S(S(S(S(S(0)))))

S(s(s(s(s(0)))))

7

8=s

S(S(S(S(S(0)))))

?

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

S(S(S(S(S(0))))

S(S(S(S(S(0)))))

S(S(-2))

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

S(s(s(s(s(0)))))

S(s(s(s(s(0)))))

5=S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

Please type your answer in the box below: Express the number 5 in terms of...

S(S(S(S(S(0)))))

s(s(s(s(s(0)))))

5=S(S(S(S(S(0)))))

5=S(S(S(S(0))))

5 = S(S(S(S(S(0)))))

s(s(s(s(s(0)))))

5 = S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

5 = S(S(S(S(S(0))))

s(s(s(s(s(0)))))

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

5= S(S(S(S(S(0)))))

0

5 = S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

5 = S( S( S( S( S(0) ) ) ) )

Please type your answer in the box below: Express the number 5 in terms of...

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

5=S(S(S(S(S(0)))))

0 1 2 3 4

S(S(S(S(S(0)))))

S(S(S(S(1))))

S(S(S(S(S(S(0))))))

5=S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

5=S(S(S(S(S(0))))))

5 = S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

S(s(s(s(s(0))))

S(S(S(S(S(0)))))

S(S(S(S(S(0))))

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

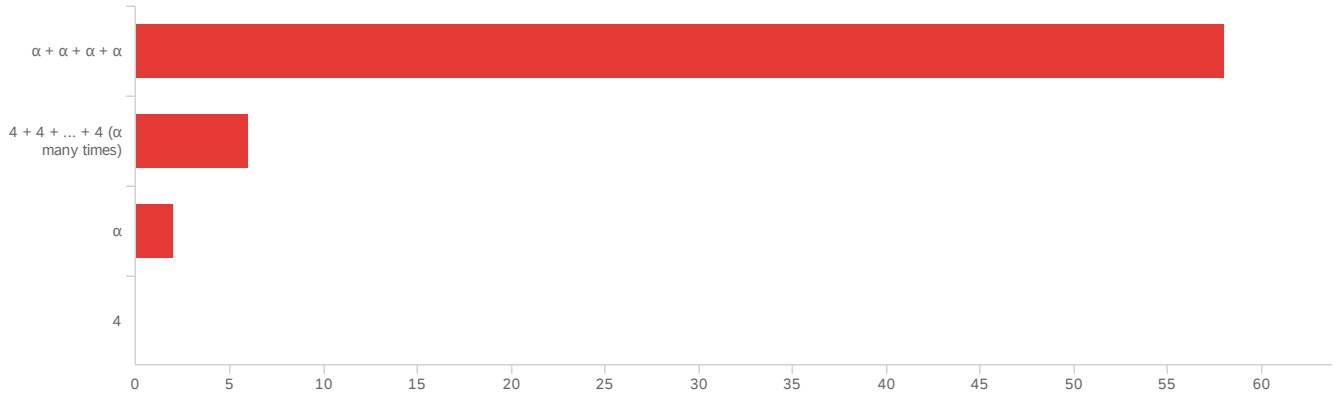
S(s(s(s(s(0)))))

S(S(S(S(S(0)))))

S(S(S(S(S(0)))))

s(s(3)

## Q29 - Multiple choice: For an arbitrary ordinal number α, which of the following is a representation of α * 4?

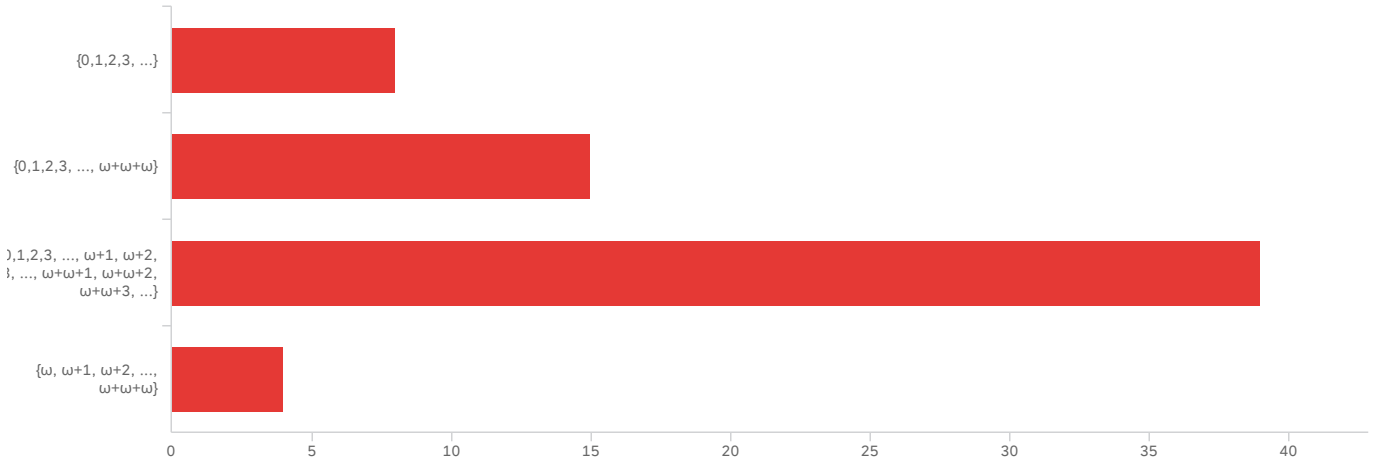



| # | Field | Minimum | Maximum | Mean | Std Deviation | Variance | Count |
|---|---|---|---|---|---|---|---|
| 1 | Multiple choice: For an arbitrary ordinal number α, which of the following is a representation of α * 4? | 1.00 | 3.00 | 1.15 | 0.43 | 0.19 | 66 |

| # | Field | | Choice Count |
|---|---|---|---|
| 1 | α + α + α + α | 87.88% | 58 |
| 2 | 4 + 4 + ... + 4 (α many times) | 9.09% | 6 |
| 3 | α | 3.03% | 2 |
| 4 | 4 | 0.00% | 0 |
| | | | 66 |

Showing rows 1 - 5 of 5

## Q28 - Multiple choice: Which of the following is a representation of ω * 3 in set notation (Hint: recall that ω = {0, 1, 2, 3, ...})?

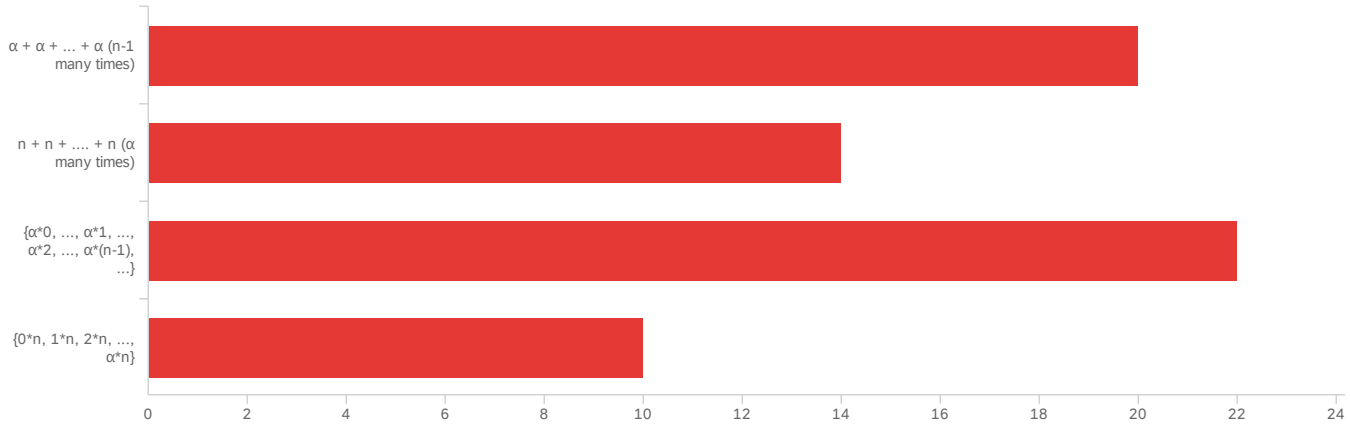



| # | Field | Minimum | Maximum | Mean | Std Deviation | Variance | Count |
|---|---|---|---|---|---|---|---|
| 1 | Multiple choice: Which of the following is a representation of ω * 3 in set notation (Hint: recall that ω = {0, 1, 2, 3, ...})? | 1.00 | 4.00 | 2.59 | 0.78 | 0.61 | 66 |

| # | Field | | Choice Count |
|---|---|---|---|
| 1 | {0,1,2,3, ...} | 12.12% | 8 |
| 2 | {0,1,2,3, ..., ω+ω+ω} | 22.73% | 15 |
| 3 | {0,1,2,3, ..., ω+1, ω+2, ω+3, ..., ω+ω+1, ω+ω+2, ω+ω+3, ...} | 59.09% | 39 |
| 4 | {ω, ω+1, ω+2, ..., ω+ω+ω} | 6.06% | 4 |
| | | | 66 |

Showing rows 1 - 5 of 5

## Q30 - Multiple choice: For an arbitrary ordinal number α and a natural number n ∈ ℕ, which of the following best represents the ordinal number α * n?

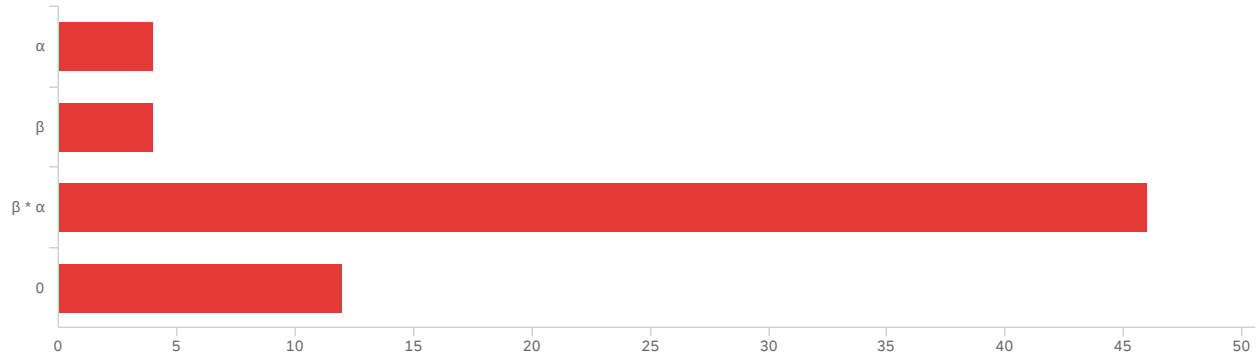



| # | Field | Minimum | Maximum | Mean | Std Deviation | Variance | Count |
|---|---|---|---|---|---|---|---|
| 1 | Multiple choice: For an arbitrary ordinal number α and a natural number n ∈ ℕ, which of the following best represents the ordinal number α * n? | 1.00 | 4.00 | 2.33 | 1.06 | 1.13 | 66 |

| # | Field | | Choice Count |
|---|---|---|---|
| 1 | α + α + ... + α (n-1 many times) | 30.30% | 20 |
| 2 | n + n + .... + n (α many times) | 21.21% | 14 |
| 3 | {α*0, ..., α*1, ..., α*2, ..., α*(n-1), ...} | 33.33% | 22 |
| 4 | {0*n, 1*n, 2*n, ..., α*n} | 15.15% | 10 |
| | | | 66 |

Showing rows 1 - 5 of 5

## Q52 - Multiple choice: For any pair of ordinal numbers α, β, which of the following could never be an element in the set representation of the ordinal number β * α?

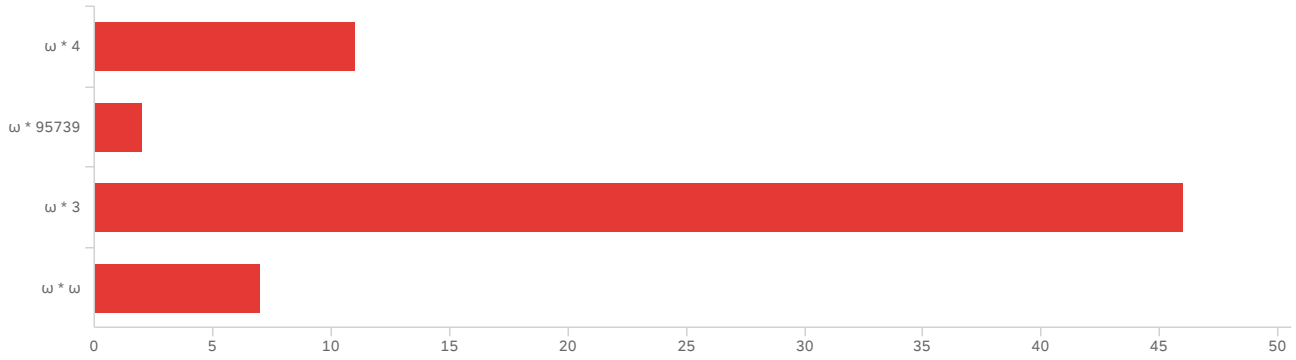



| # | Field | Minimum | Maximum | Mean | Std Deviation | Variance | Count |
|---|---|---|---|---|---|---|---|
| 1 | Multiple choice: For any pair of ordinal numbers α, β, which of the following could never be an element in the set representation of the ordinal number β * α? | 1.00 | 4.00 | 3.00 | 0.70 | 0.48 | 66 |

| # | Field | | Choice Count |
|---|---|---|---|
| 1 | α | 6.06% | 4 |
| 2 | β | 6.06% | 4 |
| 3 | β * α | 69.70% | 46 |
| 4 | 0 | 18.18% | 12 |
| | | | 66 |

Showing rows 1 - 5 of 5

## Q53 - Multiple choice: Which of the following is an element in the set representation of the ordinal number ω * 4?




| # | Field | Minimum | Maximum | Mean | Std Deviation | Variance | Count |
|---|---|---|---|---|---|---|---|
| 1 | Multiple choice: Which of the following is an element in the set representation of the ordinal number ω * 4? | 1.00 | 4.00 | 2.74 | 0.86 | 0.74 | 66 |

| # | Field | | Choice Count |
|---|---|---|---|
| 1 | ω * 4 | 16.67% | 11 |
| 2 | ω * 95739 | 3.03% | 2 |
| 3 | ω * 3 | 69.70% | 46 |
| 4 | ω * ω | 10.61% | 7 |
| | | | 66 |

Showing rows 1 - 5 of 5

**End of Report**