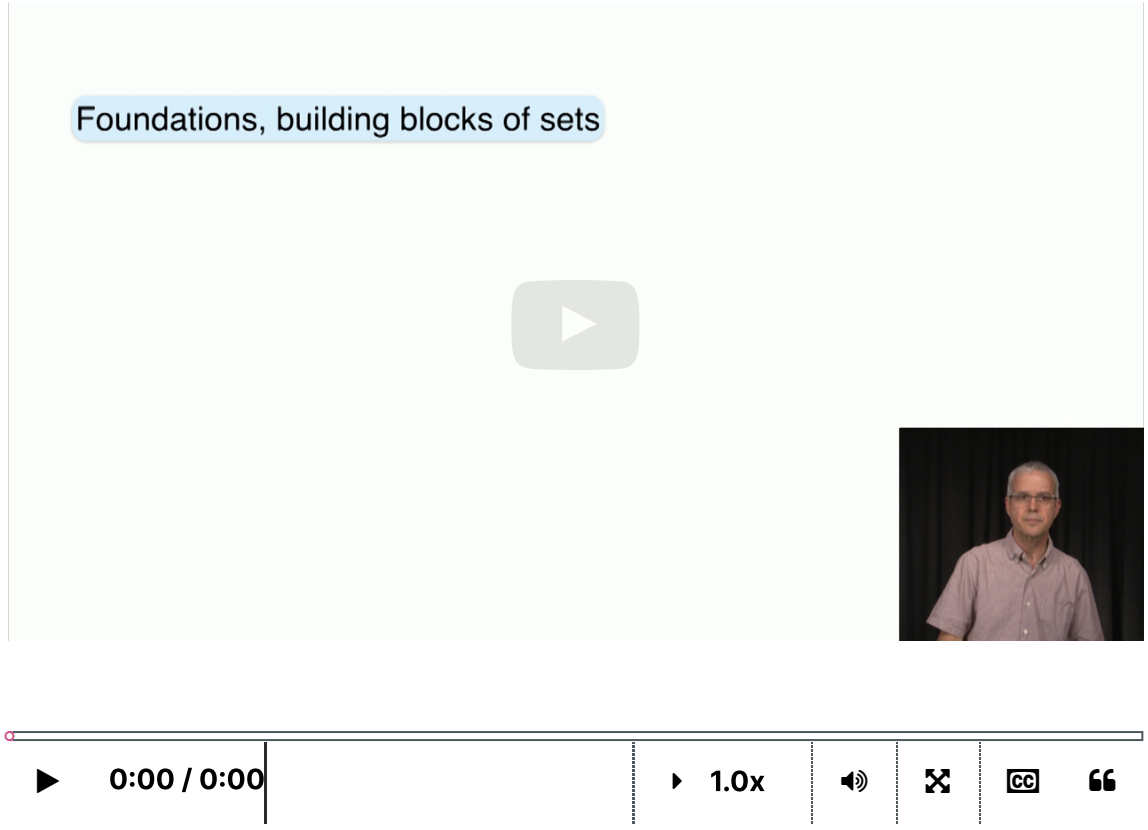
Elements, sets, and membership

Problem Sets due Apr 26, 2022 00:05 +03 Completed

Video

Start of transcript. Skip to the end.



- Hello and welcome back.

Today, we'll start talking about sets

and we'll begin by giving things names

so we can describe them precisely and concisely.

And we'll talk about elements, sets,

2.1_Notation

POLL

The number zero is an element of the empty set.

RESULTS

True	**2%**
False	**98%**

Submit

Results gathered from 62 respondents.

FEEDBACK

False. Empty set has no elements. No zero, no zilch, no nada - nothing!

1 (Graded)

1.0/1.0 point (graded)

The empty set $\emptyset$ is unique.

- [x] True
- [ ] False

✔

Explanation

$\emptyset$ is the unique set having no elements.

The universal set Ω is unique.

- [ ] True

- [x] False

Explanation
Ω varies. It can be $\mathbb{R}, \mathbb{C}$, etc.

Submit You have used 1 of 4 attempts

Answers are displayed within the problem

2 (Graded)

1.0/1.0 point (graded)
Which of the following hold?

- [x] $0 \in \{0, 1\}$
- [ ] $a \in \{A, B\}$
- [x] $\{a, b\} \in \{\{a, b\}, c\}$
- [ ] $a \in \{\{a, b\}, c\}$
- [ ] $\{a\} \in \{a\}$

Explanation
- True. $\{0, 1\}$ contains two elements, and 0 is one of them.
- False. $\{A, B\}$ contains two elements, A and B, but not a.
- True. $\{\{a, b\}, c\}$ has two elements, the set $\{a, b\}$, and c.
- False. a is an element of $\{a, b\}$, not of $\{\{a, b\}, c\}$.
- False. $\{a\}$ has only one element a, not the set $\{a\}$. More about that in the next lecture.

Submit You have used 1 of 4 attempts

Answers are displayed within the problem

3 # elements: empty set

0 points possible (ungraded)
Recall that $\emptyset$ is the empty set. How many elements do the following sets have?

$\emptyset$

0 **Answer:** 0

0

$\{\emptyset\}$

1 **Answer:** 1

1

1

$\{\emptyset, \emptyset\}$

1

✔ **Answer:** 1

1

$\{\{\emptyset\}, \emptyset\}$

2

✔ **Answer:** 2

2

Explanation
0, the empty set has no elements.
1, just the empty set.
1, $\{\emptyset, \emptyset\} = \{\emptyset\}$, hence contains one element.
2, $\emptyset$ and $\{\emptyset\}$.

Submit You have used 2 of 4 attempts

Answers are displayed within the problem

4 # elements: a

0 points possible (ungraded)
How many elements do the following sets have?

$\{a\}$

1

✔ **Answer:** 1

1

$\{a, a\}$

1

✔ **Answer:** 1

1

$\{a, \emptyset\}$

2

✔ **Answer:** 2

2

$\{\{a\}, a\}$

2

✔ **Answer:** 2

2

$\{\{\{a\}\}\}$

1

✔ **Answer:** 1

1

Explanation
$\{a\}$ has one element, a.
As we mentioned $\{a, a\} = \{a\}$, hence both sets have one element.
a is different from the setn $\{a\backslash\}$ that contains a, hence two elements.
One element, the set $\{a\}$.

Submit You have used 1 of 4 attempts

Answers are displayed within the problem

5 # elements: a, b

0 points possible (ungraded)
How many elements do the following sets have?

$\{a, b\}$

2 **Answer:** 2

2

$\{\{a, b\}\}$

1 **Answer:** 1

1

$\{\{a, b\}, \{b, a\}, \{a, b, a\}\}$

1 **Answer:** 1

1

$\{a, b, \{a, b\}\}$

3 **Answer:** 3

3

Explanation
The elements are a and b, hence 2.
There is a single element, the set $\{a, b\}$, hence 1.
Again just one element, the set $\{a, b\}$, written thrice, hence 1.
The elements are a, b, and $\{a, b\}$, hence 3.

Submit You have used 1 of 4 attempts

Answers are displayed within the problem

7 Animal anagrams

0 points possible (ungraded)
Let A be the set of anagrams of singular English animal names. For example, "nails" and "slain" are anagrams of "snail", so all three $\in A$, yet "bar" $\notin A$.

Which of the following $\in A$?

- [ ] tan ✔
- [x] pea ✔
- [x] low ✔
- [ ] bare ✔
- [ ] loin ✔
- [x] bolster ✔

✖

Explanation
ant, ape, owl, bear, lion, lobster, so all $\in$.
Maybe a bit much to learn the meaning of $\in$ and $\notin$, but hopefully you had fun.

Submit You have used 4 of 4 attempts

Answers are displayed within the problem

8 Elements of a set

0 points possible (ungraded)
List the elements of the following sets.

Write each element once, using 'emptyset' for $\emptyset$ and 'none' if there are no elements. Separate elements by commas, without any spaces.

$\{a\}$

a ✔ **Answer:** a **or** a

$\{\{a\}\}$

{a} ✔ **Answer:** $\{a\}$ **or** {a}

$\{a, \{b\}\}$

a,{b} ✔ **Answer:** $a, \{b\}$ **or** a,{b} **or** $b, \{a\}$ **or** b,{a}

$\{\emptyset\}$

emptyset ✔ **Answer:** $\emptyset$ **or** emptyset **or** 'emptyset'

$\emptyset$

none

✔ **Answer:** none **or** 'none'

Submit You have used 2 of 4 attempts

Answers are displayed within the problem

9 Sets from elements

0 points possible (ungraded)

Write the sets containing the following elements.

Enter your answer without any spaces, list every element once, and write 'emptyset' for $\emptyset$.

a

{a}

✔ **Answer:** $\{a\}$ **or** {a}

a, a

{a}

✔ **Answer:** $\{a\}$ **or** {a}

$\{a\}$

{{a}}

✔ **Answer:** $\{\{a\}\}$ **or** {{a}}

$\{a, b\}, \{b, a\}$

{{a,b}}

✔ **Answer:** $\{\{a, b\}\}$ **or** $\{\{b, a\}\}$ **or** {{a,b}} **or** {{b,a}}

$a, \{b\}$

{a,{b}}

✔ **Answer:** $\{a, \{b\}\}$ **or** $\{\{b\}, a\}$ **or** {a,{b}} **or** {b,{a}}

$\emptyset$

{emptyset}

✔ **Answer:** $\{\emptyset\}$ **or** {emptyset} **or** {'emptyset'}

No elements

{}

✖ **Answer:** $\emptyset$ **or** emptyset **or** 'emptyset'

Submit You have used 1 of 1 attempt

Answers are displayed within the problem

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Some simple sets

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Problem Sets due Apr 26, 2022 00:05 +03 Completed

Video

Start of transcript. Skip to the end.

0:00 / 0:00 1.0x

- Hello and welcome back.

In the last lecture, we introduced sets

and now we would like to define a few basic sets,

roughly we want to get a few new toys,

2.2_Basic_Sets

In slides 8, it is "{m, m+d, m+2d} <= n - 1" instead of of "{m, m+d, m+2d} < n - 1".

POLL

How many elements are there in the real interval [2,4)?

RESULTS

1	2%
2	43%
3	3%
Infinitely many	52%

Submit

Results gathered from 58 respondents.

FEEDBACK

The real interval [2,4) contains the infinitely many points 2, 2.1, 2.11, 2.111, ... (and more..).

1 (Graded)

0/1 point (graded)

Which of the following define a set unambiguously?

- [x] {3,4,5,7}
- [ ] {negative primes}
- [ ] $\{x \in \mathbb{R} \mid x^2 + x > 100\}$

- [ ] $\{x \in \mathbb{R} \mid x \cdot y > 100\}$
- [ ] {good drivers in San Diego}

✖

Explanation
- True. The most vanilla type of definition.
- True. Happens to be the empty set. There are no negative primes.
- False. y is not defined, so neither is the set.
- False. What's good for the goose is not good for the gander...

Submit You have used 4 of 4 attempts

Answers are displayed within the problem

2

0 points possible (ungraded)
Which of the following are true?

- [x] $0 \in \{\text{Even numbers}\}$
- [ ] $0.5 \in \mathbb{N}$
- [ ] $\{-1\} \in \{x \in \mathbb{R} \mid x^2 = 1\}$
- [ ] $0.5 \in \{x \in \mathbb{Z} \mid 2x^2 + x - 1 = 0\}$
- [ ] $\emptyset \in \mathbb{Q}$

✔

Submit You have used 2 of 4 attempts

3

0 points possible (ungraded)
Which of the following hold?

- [ ] $\{0\} = \emptyset$
- [x] $\{0, 1, 2\} = \{2, 0, 1, 1\}$
- [ ] $\{\{0\}, 1\} = \{0, \{1\}\}$

✔

Explanation
- False. $\{0\}$ contains the element 0, while $\emptyset$ contains no elements.
- True. The order and repetition don't matter.
- False. 1 is an element of the set on the left, but not on the right.

Submit You have used 1 of 2 attempts

Answers are displayed within the problem

4 (Graded)

1/1 point (graded)

Which of the following are true?

- [ ] $e \in \{1, 2, \ldots, 10\}$
- [x] $\pi \in (3, 3.5)$
- [ ] $2 \in [-2, 2)$

Explanation

- False. $\{1, 2, \ldots, 10\}$ is a set of integers, but e is not an integer.
- True. As $3 < \pi < 3.5$, $\pi \in (3, 3.5)$.
- False. $[-2, 2)$ does not include 2.

Submit You have used 1 of 4 attempts

Answers are displayed within the problem

5

0 points possible (ungraded)

List all the elements of the following sets.

Note: Represent your answers in ascending order, For example the set {1,-1,0} should be written as -1,0,1 (without whitespace).

$\{x \in \mathbb{Z} \mid -2 \leq x < 5\}$

-2,-1,0,1,2,3,4 **Answer:** -2,-1,0,1,2,3,4 **or** {-2,-1,0,1,2,3,4}

$\{x \in \mathbb{N} \mid x^2 + x - 2 = 0\}$

-2,1 **Answer:** 1 **or** {1}

$\{x \in \mathbb{R} \mid x^3 + x - 2 = 0\}$

-0.5,1 **Answer:** 1 **or** {1}

Hint (1 of 1): For the cubic equation, you can first guess a solution a and then factor out $(x - a)$ on the left-hand side

Next Hint

Submit You have used 1 of 1 attempt

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? does -1 belong to R set?
does -1 belong to R set? 2

? The Last equation of question 5
I could not solve how x^3 + x -2 =0 is solved to x=1. Need more explanation 2

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Set Relations

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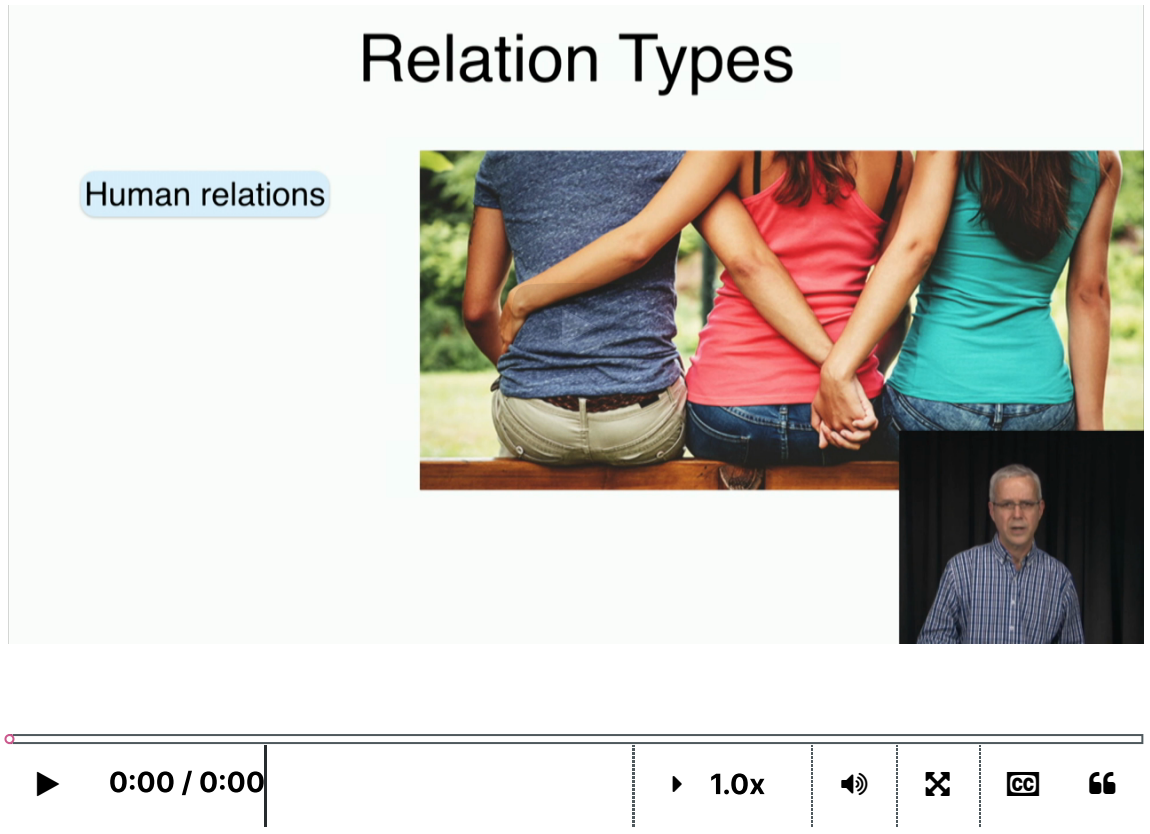

Start of transcript. Skip to the end.

- Hello and welcome back.

So now, that we have introduced sets

and saw how to visualize them,

we want to start talking about set relations.

And specifically, we'll generalize some relations

between numbers and we'll talk about equality

2.4_Relations

POLL

If S is a proper, or strict, subset of T, then:

RESULTS

S cannot be empty	**7%**
T cannot be empty	**46%**
S and T must intersect	**48%**

Submit

Results gathered from 46 respondents.

FEEDBACK

T cannot be empty. T must contain at least one element that is not in S, hence cannot be empty.

Observe that S can be the empty set, for example the empty set is a proper subset of {1}.
And since S can be empty, it also does not have to intersect T.

1

0 points possible (ungraded)

Given the expression $m \in A$, what can be said?

- [x] m belongs to A
- [ ] A is a member of m
- [x] m is an element of the set A

- [ ] m is a set of elements
- [x] A contains m

Answer
Correct:
Video: Set Notations
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Video: Set Notations

Explanation
- True.
- False. m is a member of A.
- True.
- False. m is not a set.
- True.

Submit You have used 1 of 4 attempts

Answers are displayed within the problem

2

0 points possible (ungraded)
Which of the following is NOT true?

- ( ) $\{red, green, blue\} = \{blue, red, green\}$
- ( ) $\{a, b, c, d, e\} = \{a, a, b, b, c, c, d, d, e, e\}$
- ( ) $\{1, 2, 3\} \ni 1$
- (•) $2 \in \{all\ odd\ integers\}$

Explanation
- The statement is true. The order does not matter.
- The statement is true. The repetition does not matter.
- The statement is true. 1 is in $\{1, 2, 3\}$.
- The statement is false. 2 is not odd.

Submit You have used 1 of 2 attempts

Answers are displayed within the problem

3

0 points possible (ungraded)
Which of the following holds?

- ( ) $\{3, 4\} \not\supset \{3, 4\}$

- [ ] $\{3,4\} \neq \{3,4\}$
- [ ] $\{4,3\} \subset \{3,4\}$
- [x] $\{3,4\} \supset \{4,3\}$

✖

Answer
Incorrect: Video: Set Relations

Explanation
$\{3,4\} = \{3,4\}$, $\{3,4\}$ is not a proper subset of $\{3,4\}$.

Submit You have used 2 of 2 attempts

Answers are displayed within the problem

4 (Graded)

1/1 point (graded)
Which of the following set pairs are equal?

- [x] $\{x \in \mathbb{R} \mid x^2 - 4x + 3 = 0\}$ and $\{3,1,3\}$
- [x] $\{x \in \mathbb{Q} \mid x^2 = 10\}$ and $\emptyset$
- [ ] $\{0\}$ and $\{\emptyset\}$
- [x] $\{$ letters in word $\textit{little}$ $\}$ and $\{$ letters in word $\textit{title}$ $\}$

✔

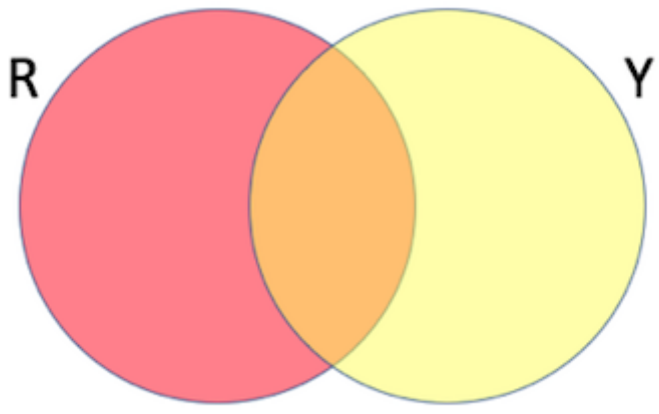
Explanation
- True. $\{1,3\} = \{3,1,3\}$.
- True. The solution of $x^2 = 10$ is $\pm\sqrt{10}$, which are not rational.
- False. $0 \neq \emptyset$.
- True. $\{$ l, i, t, t, l, e $\} = \{$ t, i, t, l, e $\}$.

Submit You have used 4 of 4 attempts

Answers are displayed within the problem

5

0 points possible (ungraded)
If the following Venn Diagram has elements in the red, orange, and yellow regions, the sets R and Y satisfy:



- [ ] R equals Y
- [x] R intersects Y
- [ ] R is contained in Y
- [x] Y is not a subset of R
- [ ] R and Y are disjoint

✔

Explanation
- False. $R \neq Y$.
- True. $R \cap Y \neq \emptyset$.
- False. $R \not\subset Y$.
- True. $Y \not\subset R$.
- False. $R \cap Y \neq \emptyset$.

Submit You have used 2 of 4 attempts

Answers are displayed within the problem

6

1/1 point (graded)
Which of the following are subsets of $A = [2, 4)$?

- [ ] $B = \{x \in \mathbb{R} \mid x + 3 > 6\}$
- [ ] $C = \{2, 3, 4\}$
- [x] $D = (2, 4)$
- [x] $E = \emptyset$

✔

Explanation
- False. $B = (3, +\infty)$.
- False. $4 \notin A$.
- True.
- True.

Submit You have used 2 of 4 attempts

Answers are displayed within the problem

7 (Graded)

2.0/2.0 points (graded)
Let $\mathbb{P}(S)$ be the collection of all subsets of S, and $\mathbb{Q}(S)$ be the collection of all *proper* subsets of S.

Which of the following hold for every set S?

- [ ] $\mathbb{P}(S) \subseteq \mathbb{Q}(S)$
- [x] $\mathbb{P}(S) \supseteq \mathbb{Q}(S)$
- [x] $\mathbb{P}(S) \supset \mathbb{Q}(S)$
- [ ] $\mathbb{P}(S) = \mathbb{Q}(S)$

Explanation
The collection of subsets $\mathbb{Q}(S)$ is $\mathbb{P}(S)$ minus S itself.
Hence $\supset$ and $\supseteq$ hold, while the rest do not.

? **Hint (1 of 1):** It might be helpful to evaluate $\mathbb{P}(S)$ and $\mathbb{Q}(S)$ for some small set S. Next Hint

Submit You have used 3 of 3 attempts

Answers are displayed within the problem

8 (Graded)

2.0/2.0 points (graded)
Which of the following set pairs intersect?

- [x] $\{1, 2, 3\}$ and $\{2, 4, 6\}$
- [x] {prime numbers} and {even numbers}
- [x] $\{x \in \mathbb{R} \mid x^2 \leq 4\}$ and $[2, 7)$
- [ ] $\emptyset$ and $\emptyset$
- [ ] $\{\emptyset, 1, 2\}$ and $\emptyset$

Explanation
- True. 2 is in both sets.
- True. 2 is in both sets.
- True. 2 is in both sets.
- False. Two emptysets do not intersect, because they don't share any elements.
- False. Emptysets have no element, hence they do not have shared elements with other sets.

Submit You have used 1 of 4 attempts

Answers are displayed within the problem

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Set Operations

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Start of transcript. Skip to the end.

- Hello and welcome back.

In the last lecture we talked about set relations

and today we would like to discuss set operations

but before that we have a puzzle to resolve

so if you remember,

2.5_Operations

POLL

If A-B=A for sets A and B, then

RESULTS

B must be an empty set	**22%**
B must be a subset of A	**0%**
A and B must intersect	**2%**
A and B must be disjoint	**75%**

Submit

Results gathered from 40 respondents.

FEEDBACK

A and B must be disjoint, so that when you remove from A the elements of B, nothing gets taken away.

1

0 points possible (ungraded)

If $\Omega = \{x, y, z\}$, then $\{x,y\}^c$ is

- $\emptyset$
- z
- $\{z\}$
- $\{x,y\}$

Explanation
The element that is in Ω but not in $\{x,y\}$ is z. The answer is $\{z\}$

Submit You have used 1 of 2 attempts

Answers are displayed within the problem

2

0 points possible (ungraded)
Which of the following equals G for all Ω and G?

- [x] $G - \emptyset$
- [ ] $\Omega - G$
- [x] $\Omega - G^c$
- [ ] $G \cap \emptyset$

Explanation
- True.
- False. $\Omega - G = G^c$.
- True.
- False. $G \cap \emptyset = \emptyset$.

Submit You have used 1 of 4 attempts

Answers are displayed within the problem

3 Implying equality (Graded)

1/1 point (graded)
Which of the following imply $A = B$?

- [x] $A^c = B^c$
- [x] $A \Delta B = \emptyset$
- [x] $A - B = B - A$
- [x] $A \cup B = A \cap B$

Explanation
- True.
- True. $A \Delta B = (A \cup B) - (A \cap B)$.
- True. $A - B = A - (A \cap B)$, $B - A = B - (A \cap B)$.
- True.

Submit You have used 1 of 4 attempts

Submit You have used 1 of 4 attempts

Answers are displayed within the problem

4 (Graded)

1/1 point (graded)

Suppose that the following hold for an unknonwn set C. Which of the following implies $A = B$, regardless of what C is?

- [ ] $A - C = B - C$
- [ ] $A \cap C = B \cap C$
- [ ] $A \cup C = B \cup C$
- [x] $A \Delta C = B \Delta C$

Explanation

1 and 3 are Flase as if C is the universal set then equality holds regardless of A and B.
2 is False as if $A = \{1\},\ B = \{2\},\ C = \{3\}$ then $A \cap B = A \cap C = \emptyset$ while and $A \neq B$.
4 is correct. While the proof is simple, it is a bit tedious. You can show that if the equality $A \Delta C = B \Delta C$ holds, then $A \subseteq B$. Then by symmetry, $B \subseteq A$, and hence $A = B$.
To show that $A \subseteq B$, assume that a is any element of A and consider two cases: $a \in C$ and $a \notin C$. You can show that in both cases the equality implies $a \in B$.

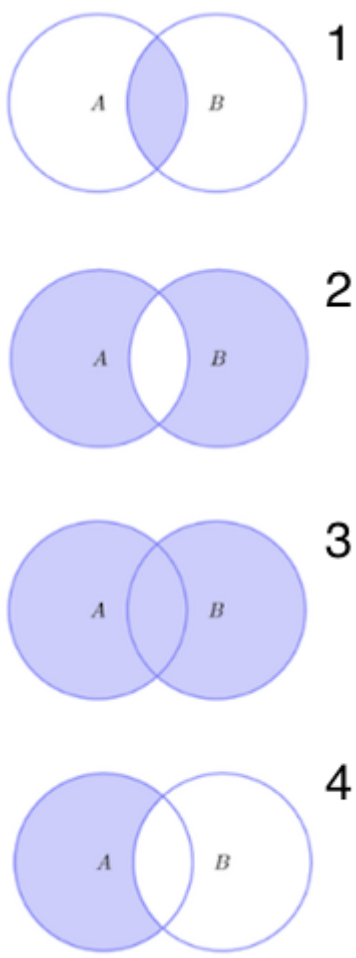
Submit You have used 3 of 4 attempts

Answers are displayed within the problem

5

0 points possible (ungraded)

Which image identifies the union $A \cup B$?



- ◯ 1

- 2
- 3
- 4

Answer
Correct: Video: Set Operations

Explanation
1. $A \cap B$.
2. $A \Delta B$.
4. $A - B$.

Submit You have used 1 of 2 attempts

Answers are displayed within the problem

6

0 points possible (ungraded)
For any two sets A and B, add $\subseteq$ or $\supseteq$ to make the following statements true.

- $A \cap B$ ____ A

  Answer: $\subseteq$

- $A \cup B$ ____ A

  Answer: $\supseteq$

- $A - B$ ____ A

  Answer: $\subseteq$

- $A \cap B$ ____ $A \cup B$

  Answer: $\subseteq$

- $A - B$ ____ $A \Delta B$

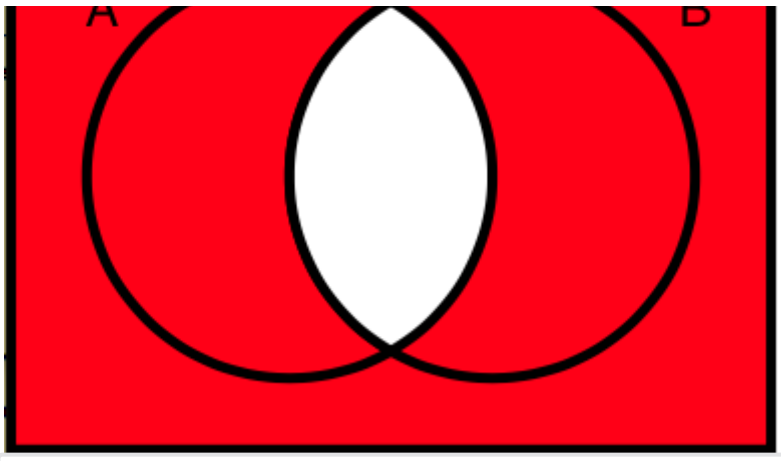
  Answer: $\subseteq$

Submit You have used 1 of 1 attempt

Answers are displayed within the problem

7

0 points possible (ungraded)
What does the red area in the following Venn Diagram represent?



- ( ) $(A \cup B) - (A \cap B)$
- (•) $(A \cap B)^c$
- ( ) $A \cup B$
- ( ) $A \cap B$

✔

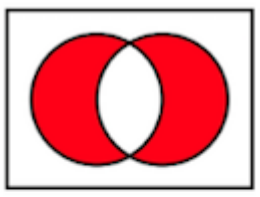
Explantation
The white area represents $A \cap B$, so the red area represents $(A \cap B)^c$.

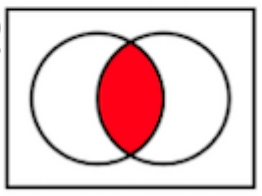
Submit You have used 2 of 2 attempts

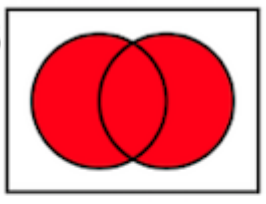
Answers are displayed within the problem

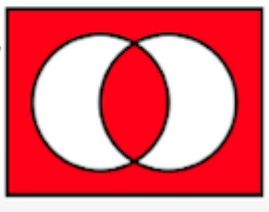
8 Venn's view of symmetric difference

0 points possible (ungraded)
Which image shows the symmetric difference between the two circle sets?

1


2


3


4


- (•) 1
- ( ) 2
- ( ) 3
- ( ) 4

Explanation
2. $A \cap B$.
3. $A \cup B$.
4. $(A \Delta B)^c$.

Submit You have used 1 of 2 attempts

Answers are displayed within the problem

9

0 points possible (ungraded)
Let $A \neq \emptyset$. Which of the following is different from the others?

- $A \cup \emptyset$
- $A \cup A$
- $A \cap A$
- $A \cap \emptyset$

Explanation
- $A \cup \emptyset = A$.
- $A \cup A = A$.
- $A \cap A = A$.
- $A \cap \emptyset = \emptyset$.

Submit You have used 1 of 4 attempts

Answers are displayed within the problem

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#6 not working
The drop downs were blank on 6 for me, but that options are first 'subset' and then 'superset' 6

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Tuples and products

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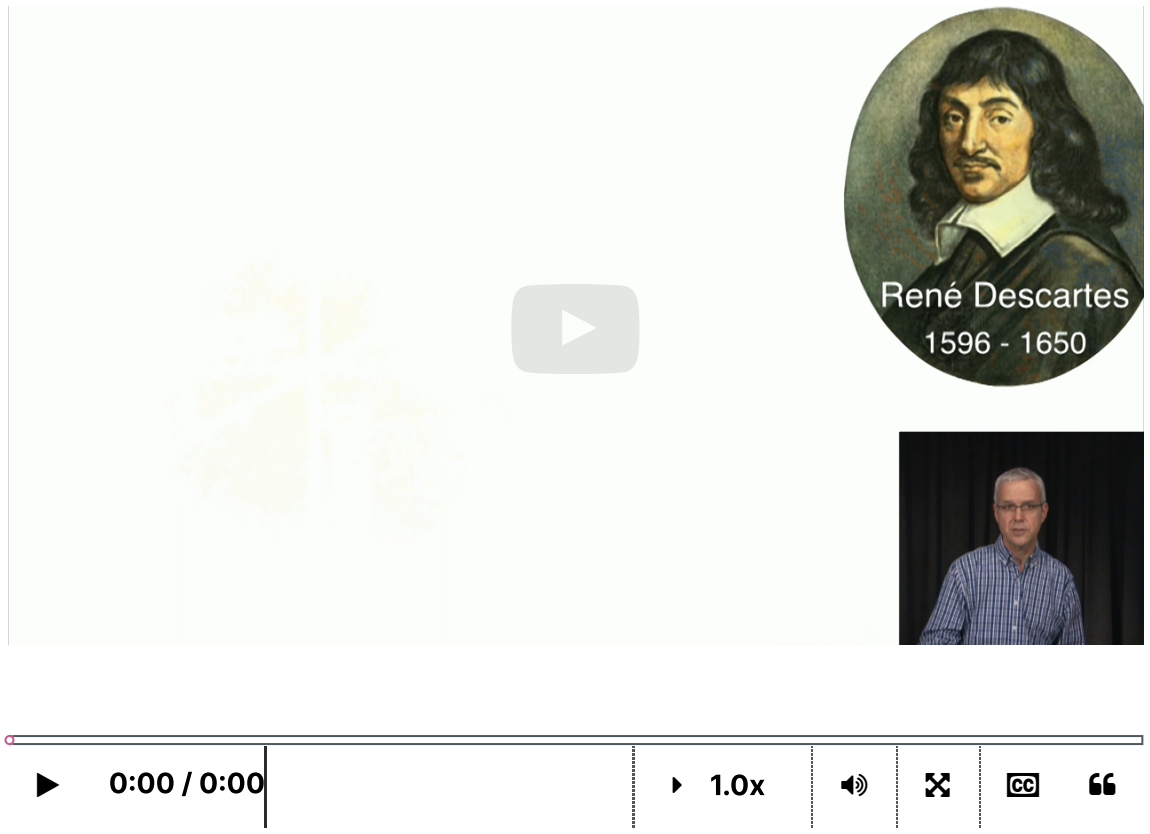
Problem Sets due Apr 26, 2022 00:05 +03 Completed

Video

Start of transcript. Skip to the end.



- Hello and welcome back.

In the last lecture we discussed set operations

like unions and intersections and in this lecture

we want to talk about the final operation

which is Cartesian products.

Cartesian products are named after Descartes,

2.6_Cartesian_Products

POLL

Which of the following is NOT in the cartesian product {1,2} x {3,4}?

RESULTS

(3,1)	**97%**
(1,3)	**0%**
(1,4)	**3%**
(2,4)	**0%**

Submit

Results gathered from 38 respondents.

FEEDBACK

The cartesian product is {(1, 3), (1, 4), (2, 3), (2, 4)}, which does not include (3, 1). In general, for (x,y) to be in A x B, the element x must be in A and y must be in B. Here neither happens.

1 (Graded)

1/1 point (graded)

Which of the following statements hold?

- [ ] $\{1,2\} \subseteq \{1,2\}^2$
- [ ] $\{1,2\} \in \{1,2\}^2$
- [ ] $(1,2) \subseteq \{1,2\}^2$

- [x] $(1,2) \in \{1,2\}^2$

✔

? **Hint (1 of 1):** Recall that $(1,2)$ is the ordered pair consisting of 1 and 2, while $\{1,2\}$ is the set consisting of the elements 1 and 2.

Next Hint

Submit You have used 1 of 4 attempts

2 (Graded)

0.0/2.0 points (graded)

Which of the following statements hold for all A?

- [x] $A \times \emptyset = \emptyset$ ✔
- [ ] $A \times \emptyset = A$
- [x] $A \subseteq A^2$
- [ ] $A \in A^2$
- [ ] $A \times A^c = \emptyset$

✖

Explanation

1. The left set contains no elements, hence it is the empty set too.
For the remaining options, the left and right sets may differ. Consider $A = \{1\}$.
2. The left set contains no elements, but the right set contains 1.
3. $A^2 = \{(1,1)\}$ and does not contain the element 1.
4. $A^2 = \{(1,1)\}$ and does not contain the set A.
5. Note that to define A^c we need to define the universal set, say $\{1,2\}$, then the left set contains $(1,2)$ while the right set does not.

Submit You have used 3 of 3 attempts

Answers are displayed within the problem

3 (Graded)

2.0/2.0 points (graded)

Which of the following statements hold for all sets A, B and C?

- [ ] $A \times B = B \times A$
- [ ] $A \cap (B \times C) = (A \cap B) \times (A \cap C)$
- [x] $A \times (B \cap C) = (A \times B) \cap (A \times C)$

✔

Explanation

Explanation

1 does not hold whenever A and B are nonempty and different.
2 does not hold as the left set is a subset of A while the right set is typically not.
3 holds as (x, y) is in the left set iff $x \in A$, $y \in B$, and $y \in C$, iff (x, y) is in the right set.

Submit You have used 2 of 2 attempts

Answers are displayed within the problem

4

0 points possible (ungraded)

Add $\subseteq$, $\supseteq$, or $\in$ in the blanks to make the following statements true.

$\{(x, y) \mid x^2 + y^2 \leq 1\} \times \{x \mid -1 \leq x \leq 1\}$ ____ $\{(x, y, z) \mid x^2 + y^2 + z^2 \leq 1\}$

- $\subseteq$
- $\supseteq$
- $\in$

$(1, 2, 3)$ ____ $\{(x, y) \mid y = 2x\} \times \{x \mid |x| \leq 3\}$

- $\subseteq$
- $\supseteq$
- $\in$

$\{(x, y, z) \mid \max\{|x|, |y|, |z|\} \leq 1\}$ ____ $\{x \mid -1 \leq x \leq 1\} \times \{(x, y) \mid x^2 + y^2 \leq 1\}$

- $\subseteq$
- $\supseteq$
- $\in$

Submit You have used 0 of 4 attempts

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