

Algebra 1

Chapter 3

Section 3-8

May 13-10:02 PM

Review: Sets

Write the set of all single-digit even numbers two ways.

Roster Form

$\{2, 4, 6, 8\}$

Set Builder

$\{x \mid 2 \leq x \leq 8, x \text{ is even}\}$

$\{x \mid 10 \leq x \leq 98, x \text{ is even}\}$

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Set Concepts

Union -- Union of two sets is the group of elements in either set

**written as U

Intersection -- Intersection of two sets is the group of elements in both sets

**written as \cap

Disjoint Sets -- Sets that have no common elements

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Union of Sets

$$A = \{\underline{m}, \underline{n}, \underline{o}, \underline{p}, \underline{q}\}$$

Write A U C in roster form

$$B = \{k, m, s, t\}$$

$$C = \{\underline{s}, \underline{t}, \underline{v}\}$$

$$\{m, n, o, p, q, s, t, v\}$$

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Union of Sets

$$A = \{m, n, o, p, q\}$$

Write $A \cup B$ in roster form

$$B = \{k, m, s, t\}$$

$$C = \{s, t, v\}$$

$$\{m, n, o, p, q, k, s, t\}$$

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Union of Sets

$$A = \{m, n, o, p, q\}$$

Write $B \cap C$ in roster form

$$B = \{k, m, \underline{s}, \underline{t}\}$$

$$C = \{\underline{s}, \underline{t}, v\}$$

$$\{s, t\}$$

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Intersection of Sets

$$A = \{m, n, o, p, q\}$$

Write $A \cap C$ in roster form

$$B = \{k, m, s, t\}$$

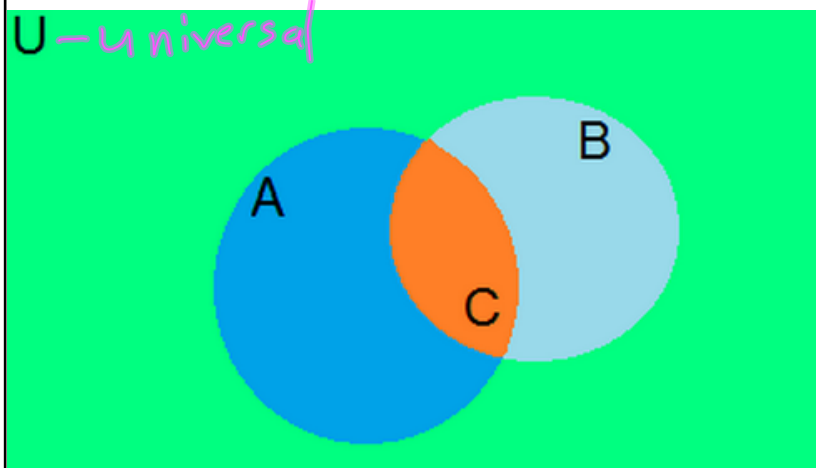
$$C = \{s, t, v\}$$

$$\{ \} = \emptyset$$

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Using Venn Diagrams

U - universal



What color(s) is $A \cap B$?

orange = C

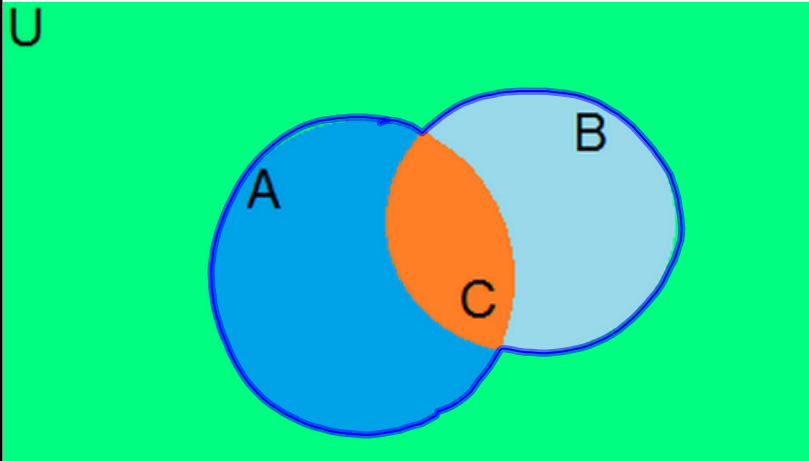
What color(s) is $A \cup B$?

Dark Blue, Light Blue, Orange

union
↓

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Using Venn Diagrams



Is $A \cap B$ a subset of A?

Yes

Is $A \cup B$ a subset of A?

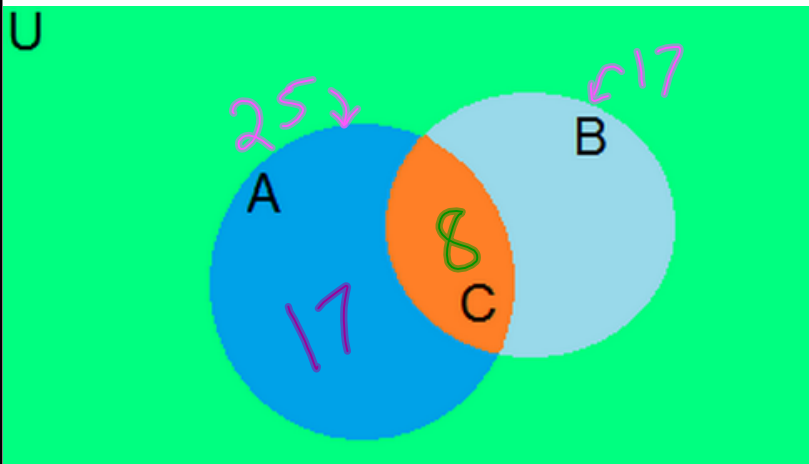
NO

Is B a subset of $A \cup B$?

Yes

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Using Venn Diagrams



A has 25 members,
 B has 17 members,
 $A \cap B$ has 8 members

How many members of A are not in B?

$$25 - 8 = 17$$

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Set Relationships

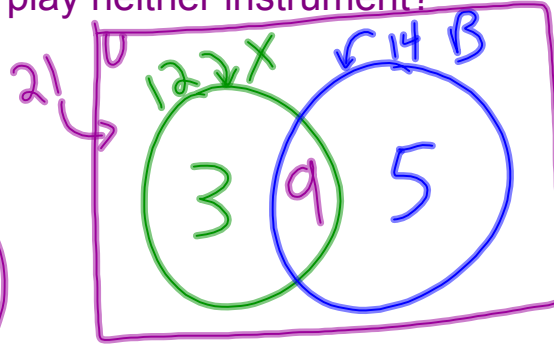
The River City band has 21 percussionists. 12 of them can play the xylophone and 14 of them can play the bass drum. 9 members can play both the bass drum and the xylophone. How many percussionists in the band can play neither instrument?

in O

$$3 + 9 + 5 = 17$$

not in O

$$21 - 17 = 4$$



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