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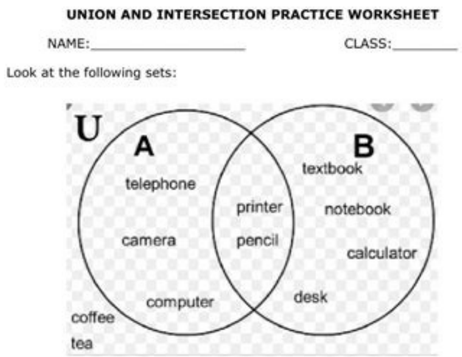
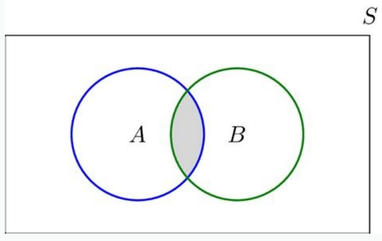
Sets union intersection complement worksheets

Union intersection complement examples. What is union intersection and complement. Sets union and intersection examples.

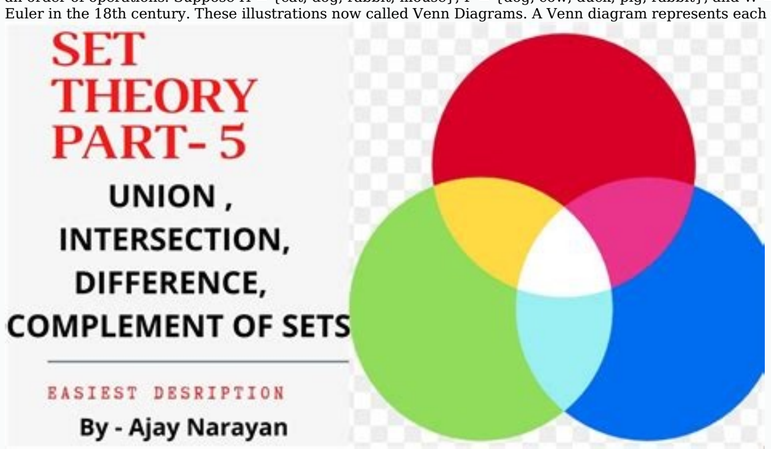
Last updated22 April 2023Tes paid licenceHow can I reuse this?A bundle is a package of resources grouped together to teach a particular topic, or a series of lessons, in one place.Bundle£4.65Bundle£3.35Bundle£3.90Select overall rating(no rating)Your rating is required to reflect your happiness.Write a reviewUpdate existing reviewIt's good to leave some feedback.Something went wrong, please try again later.This resource hasn't been reviewed yetTo ensure quality for our reviews, only customers who have purchased this resource can review itReport this resourceto let us know if it violates our terms and conditions. Our customer service team will review your report and will be in touch. Displaying all worksheets related to - Intersection Union And Complement.Worksheets are Sets union intersection and complement, Intersection and complement of events odds, Union and intersection of sets work kuta, Union intersection complement work, Work 3 unions and intersections answer key, Union and intersection of events, Set operations, Part 1 module 2 set operations venn diagrams set operations.*Click on Open button to open and print to worksheet.
\(H=\{\text { cat, dog, rabbit, mouse }\}, F=\{\text { dog, cow, duck, pig, rabbit }\} \quad W=\{\text { duck, rabbit, deer, frog, mouse }\}\) a) We start with the intersection: \(H \cap F=\{\text { dog, rabbit }\}\) Now we union that result with \(W:(H \cap F) \cup W=\{\text{dog, duck, rabbit, deer, frog, mouse }\}\) b) We start with the union: \(F \cup W=\{\text{dog, cow, rabbit, duck, pig, deer, frog, mouse }\}\) Now we intersect that result with \(H: H \cap(F \cup W)=\{\text { dog, rabbit, mouse }\}\) c) We start with the intersection: \(H \cap F=\{\mathrm{dog}, \text { rabbit }\}\) Now we want to find the elements of \(W\) that are not in \(\mathrm{H} \cap F\) \((H \cap P)^{c} \cap W=\{\text { duck, deer, frog, mouse }\}\) Showing top 8 worksheets in the category - Intersection Union And Complement.Some of the worksheets displayed are Sets union intersection and complement, Intersection and complement of events odds, Union and intersection of sets work kuta, Union intersection complement work, Work 3 unions and intersections answer key, Union and intersection of events, Set operations, Part 1 module 2 set operations venn diagrams set operations.Once you find your worksheet, click on pop-out icon or print icon to worksheet to print or download. Worksheet will open in a new window. You can & download or print using the browser document reader options. Worksheet on union and intersection of sets will help us to practice different types of questions using the basic ideas of the 'union' and 'intersection' of two or more sets.1. State whether the following are true or false:(i) If A = {5, 6, 7} and B = {6, 8, 10, 12}; then A ∪ B = {5, 6, 7, 8, 10, 12}.(ii) If P = {a, b, c} and Q = {b, c, d}; then p intersection Q = {b, c}.(iii) Union of two sets is the set of elements which are common to both the sets.(iv) Two disjoint sets have atleast one element in common.(v) Two overlap sets have all the elements common. (v) If two given sets have no elements common to both the sets, the sets are said to me disjoint. (vii) If A and B are two disjoint sets then A ∩ B = { }, the empty set. (viii) If M and N are two overlapping sets then intersection of two sets M and N is not the empty set.2. Let A, B and C be three sets such that: Set A = {2, 4, 6, 8, 10, 12}, set B = {3, 6, 9, 12, 15} and set C = {1, 4, 7, 10, 13, 16}. Find: (i) A ∪ B (ii) A ∩ B (iii) B ∩ A (iv) B ∪ A (v) B ∪ C (vi) Is A ∪ B = B ∪ A?



(vii) Is B ∩ C = B ∪ C? 3. If A = {1, 3, 7, 9, 10}, B = {2, 5, 7, 8, 9, 10}, C = {0, 1, 3, 10}, D = {2, 4, 6, 8, 10}, E = {negative natural numbers} and F = {0} Find: (i) A ∪ B (ii) E ∪ D (iii) C ∪ F (iv) C ∪ D (v) B ∪ F (vi) A ∩ B (vii) C ∩ D (viii) E ∩ D (ix) C ∩ F (x) B ∩ F (xi) (A ∪ B) ∪ (A ∩ B) (xii) (A ∪ B) ∩ (A ∩ B) 4. If A = {2, 3, 4, 5}, B ={c, d, e, f} and C = {4, 5, 6, 7}; Find: (i) A ∪ B (ii) A ∪ C (iii) (A ∪ B) ∩ (A ∪ C) (iv) A ∪ (B ∩ C) (v) Is (A ∪ B) ∩ (A ∪ C) = A ∪ (B ∩ C)? 5.
If A = {a, b, c, d}, B = {c, d, e, f} and C = {b, d, f, g}; Find: (i) A ∩ B (ii) A ∩ C (iii) (A ∩ B) ∪ (A ∩ C) (iv) A ∩ (B ∪ C) (v) Is (A ∩ B) ∪ (A ∩ C) = A ∩ (B ∪ C)? Answers for the worksheet on union and intersection of sets are given below to check the exact answers of the above set of questions.Answers:1. (i) True (ii) True(iii) False(iv) False(v) False(vi) True(vii) True(viii) True2. (i) {2, 3, 4, 6, 7, 9, 10, 12, 15}(ii) { }(iii) {6, 12}(iv) {2, 3, 4, 6, 8, 9, 10, 12, 15}(v) {{1, 3, 4, 6, 7, 9, 10, 12, 13, 15, 16}(vi) Yes, A ∪ B = B ∪ A(vii) No, B ∩ C ≠ B ∪ C3. (i) {1, 2, 3, 5, 7, 8, 9, 10}(ii) {2, 4, 6, 8, 10}(iii) {0, 1, 3, 10}(iv) {0, 1, 2, 3, 4, 6, 8, 10}(v) {0, 2, 5, 7, 8, 9, 10}(vi) {7, 9, 10}(vii) {10}(viii) ∅(ix) {0}(x) ∅(xi) {1, 2, 3, 5, 7, 8, 9, 10,(xii) {7, 9, 10}4. (i) {1, 2, 3, 4, 5, 7}(ii) {2, 3, 4, 5, 6, 7}(iii) {2, 3, 4, 5, 7}(iv) {2, 3, 4, 5, 7}(v) Yes, (A ∪ B) ∩ (A ∪ C) = A ∪ (B ∩ C)5. (i) {c, d}(ii) {b ,d}(iii) {b, c, d}(iv) {b , c, d}(v) Yes, (A ∩ B) ∪ (A ∩ C) = A ∩ (B ∪ C)worksheet on union and intersection of sets ● Sets and Venn-diagrams Worksheets ● Worksheet on Set● Worksheet on Elements Form a Set ● Worksheet to Find the Elements of Sets ● Worksheet on Properties of a Set ● Worksheet on Sets in Roster Form ● Worksheet on Sets in Set-builder Form ● Worksheet on Finite and Infinite Sets ● Worksheet on Equal Sets and Equivalent Sets ● Worksheet on Empty Sets ● Worksheet on Subsets ● Worksheet on Union and Intersection of Sets ● Worksheet on Disjoint Sets and Overlapping Sets ● Worksheet on Difference of Two Sets ● Worksheet on Operation on Sets ● Worksheet on Cardinal Number of a Set ● Worksheet on Venn Diagrams 7th Grade Math ProblemsMath Home Work Sheets From Worksheet on Union and Intersection of Sets to HOME PAGE Didn't find what you were looking for? Or want to know more information about Math Only Math. Use this Google Search to find what you need. Share this page: What’s this? Learning Outcomes Perform the operations of union, intersection, complement, and difference on sets using proper notation. Be able to draw and interpret Venn diagrams of set relations and operations. Commonly, sets interact. For example, you and a new roommate decide to have a house party, and you both invite your circle of friends. At this party, two sets are being combined, though it might turn out that there are some friends that were in both sets. It takes repetition and practice to obtain new vocabulary in a language that is new to you. Math is no different in many respects than learning a new language, with all its vocabulary, syntax, and spelling conventions. The symbols in this section may be completely unfamiliar to you. If so, you’ll need to spend time with them, employing flashcards and writing them out by hand in context. Give yourself time to learn and appreciate the language of mathematics! The union of two sets contains all the elements contained in either set (or both sets). The union is notated A ⋃ B. More formally, x ϵ A ⋃ B if x ∈ A or x ∈ B (or both) The intersection of two sets contains only the elements that are in both sets. The intersection is notated A ⋂ B. More formally, x ∈ A ⋂ B if x ∈ A and x ∈ B. The complement of a set A contains everything that is not in the set A. The complement is notated A’, or Ac, or sometimes ~A. A universal set is a set that contains all the elements we are interested in.



This would have to be defined by the context. A complement is relative to the universal set, so Ac contains all the elements in the universal set that are not in A. Notice in the descriptions of the notation introduced above that the complement of a set is denoted [latex]A^{c}[/latex]. This superscript is not an exponent. It is a decoration that denotes the complement of a set. Example If we were discussing searching for books, the universal set might be all the books in the library. If we were grouping your Facebook friends, the universal set would be all your Facebook friends. If you were working with sets of numbers, the universal set might be all whole numbers, all integers, or all real numbers Suppose the universal set is U = all whole numbers from 1 to 9. If A = {1, 2, 4}, then Ac = {3, 5, 6, 7, 8, 9}. The intersection [latex]\cup[/latex] and union [latex]\cap[/latex] symbols look a little like letters in the alphabet. In fact, that’s a trick for remembering them. The union symbol looks like a capital U, for union.
The intersection symbol looks a little like a big lower-case n, for in-tersect Consider the sets: A = {red, green, blue} B = {red, yellow, orange} C = {red, orange, yellow, green, blue, purple} Find the following: Find A ⋃ B Find A ⋂ B Find Ac⋂ C Notice that in the example above, it would be hard to just ask for Ac, since everything from the color fuchsia to puppies and peanut butter are included in the complement of the set. For this reason, complements are usually only used with intersections, or when we have a universal set in place. As we saw earlier with the expression Ac ⋂ C, set operations can be grouped together. Grouping symbols can be used like they are with arithmetic – to force an order of operations. Suppose H = {cat, dog, rabbit, mouse}, F = {dog, cow, duck, pig, rabbit}, and W = {duck, rabbit, deer, frog, mouse} Find (H ⋂ F) ⋃ W Find H ⋂ (F ⋃ W) Find (H ⋂ F)c ⋂ W Venn Diagrams To visualize the interaction of sets, John Venn in 1880 thought to use overlapping circles, building on a similar idea used by Leonhard Euler in the 18th century. These illustrations now called Venn Diagrams. A Venn diagram represents each set by a circle, usually drawn inside of a containing box representing the universal set. Overlapping areas indicate elements common to both sets. Basic Venn diagrams can illustrate the interaction of two or three sets.



Create Venn diagrams to illustrate A ⋃ B, A ⋂ B, and Ac ⋂ B A ⋃ B contains all elements in either set. Use a Venn diagram to illustrate (H ⋂ F)c ⋂ W Create an expression to represent the outlined part of the Venn diagram shown. Create an expression to represent the outlined portion of the Venn diagram shown.