

- 1 Write down the integer values of  $x$  that satisfy the inequality  $-2 \leq x < 2$ .

..... [2]

2



In triangle  $PQR$ ,  $QR = 10$  cm and  $PR = 11$  cm.

Using a ruler and compasses only, construct triangle  $PQR$ .  
The line  $PQ$  has been drawn for you.

[2]

- 3 Simplify.

$$(x^8y^7) \div (x^{-1}y^2)$$

..... [2]

4

$$f(x) = 3x - 5$$

The domain of  $f(x)$  is  $\{-3, 0, 2\}$ .

Find the range of  $f(x)$ .

{ ..... } [2]

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**Sai Gopal Sunkara**



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web answer  $\text{Na}^+ \text{aq}$  and  $\text{SO}_4^{2-} \text{aq}$  identify the chemical equation the spectator ions  $\text{KOH} \text{aq}$   $\text{HNO}_3$   $\text{KNO}_3 \text{aq}$   $\text{H}_2\text{O}$   $\text{K}^+ \text{aq}$   $\text{OH}^- \text{aq}$   $\text{H}^+ \text{aq}$   $\text{NO}_3^- \text{aq}$   $\text{K}^+ \text{aq}$   $\text{NO}_3^- \text{aq}$   $\text{H}_2\text{O}$   $\text{K}^+ \text{aq}$  and  $\text{NO}_3^- \text{aq}$  identify the chemical equation the spectator ions  $\text{Pb}^{2+} \text{aq}$   $\text{NO}_3^- \text{aq}$   $\text{PbI}_2 \text{s}$   $\text{KNO}_3 \text{aq}$

4 3 precipitation reactions chemistry libretexts - Dec 03 2022

web these ions are called spectator ions because they do not participate in the actual reaction canceling the spectator ions gives the net ionic equation which shows only those species that participate in the chemical reaction  $2\text{Ag}^+_{\text{aq}} + \text{CrO}_4^{2-}_{\text{aq}} \rightarrow \text{Ag}_2\text{CrO}_4_{\text{s}}$

**5 3 representing aqueous reaction molecular complete ionic** - Apr 07 2023

web chemical equation in which all dissolved ionic reactants and products including spectator ions are explicitly represented by formulas for their dissociated ions molecular equation chemical equation in which all reactants and products are

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web jan 29 2020 the ionic form of this reaction is  $2\text{Na}^+_{\text{aq}} + 2\text{Cl}^-_{\text{aq}} + \text{Cu}^{2+}_{\text{aq}} + \text{SO}_4^{2-}_{\text{aq}} \rightarrow 2\text{Na}^+_{\text{aq}} + \text{SO}_4^{2-}_{\text{aq}} + \text{CuCl}_2_{\text{s}}$  the sodium ions and sulfate ion are the spectator ions in this reaction they appear unchanged in both the product and reactant side of the equation

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web mar 11 2014 solution ionic equation  $\text{H}^+_{\text{aq}} + \text{Cl}^-_{\text{aq}} + \text{Na}^+_{\text{aq}} + \text{HCO}_3^-_{\text{aq}} \rightarrow \text{Na}^+_{\text{aq}} + \text{Cl}^-_{\text{aq}} + \text{H}_2\text{O}_{\text{l}} + \text{CO}_2_{\text{g}}$  the spectator ions are  $\text{Cl}^-$  and  $\text{Na}^+$  net ionic equation  $\text{H}^+_{\text{aq}} + \text{HCO}_3^-_{\text{aq}} \rightarrow \text{H}_2\text{O}_{\text{l}} + \text{CO}_2_{\text{g}}$  here is a video on spectator ions *chapter 8 04 ionic equations chemistry libretexts* - Mar 06 2023

web the six  $\text{NO}_3^-$  ions and the six  $\text{Na}^+$  ions that appear on both sides of the equation are spectator ions that can be canceled to give the net ionic equation  $3\text{Ba}^{2+}_{\text{aq}} + 2\text{PO}_4^{3-}_{\text{aq}} \rightarrow \text{Ba}_3(\text{PO}_4)_2_{\text{s}}$

4 1 writing and balancing chemical equations openstax - Jun 28 2022

web these spectator ions ions whose presence is required to maintain charge neutrality are neither chemically nor physically changed by the process and so they may be eliminated from the equation to yield a more succinct representation called a

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web practice problems on net ionic equations page 2 of 3 answer key to practice problems on net ionic equations 1 molecular  $\text{AgNO}_3_{\text{aq}} + \text{KCl}_{\text{aq}} \rightarrow \text{AgCl}_{\text{s}} + \text{KNO}_3_{\text{aq}}$  total ionic  $\text{Ag}^+_{\text{aq}} + \text{NO}_3^-_{\text{aq}} + \text{K}^+_{\text{aq}} + \text{Cl}^-_{\text{aq}} \rightarrow \text{AgCl}_{\text{s}} + \text{K}^+_{\text{aq}} + \text{NO}_3^-_{\text{aq}}$  net ionic  $\text{Ag}^+_{\text{aq}} + \text{Cl}^-_{\text{aq}} \rightarrow \text{AgCl}_{\text{s}}$

**solved identify the spectator ions and write a net ionic** - May 28 2022

web video answer you know spectator ions are the ions present on the both sides of the equation indicate cancels out in the total ionic equations so you know in a case chemical reactions are described with chemical equations which symbolically present the starting materials end products

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web net ionic equations an equation for a reaction in solution showing only those particles that are directly involved in the chemical change spectator ions an ion that is not directly involved in a chemical reaction an ion that does not change

oxidation number or composition during a reaction products

**a guide on how to find spectator ions in a chemical reaction** - Jul 10 2023

web the equation below is the final net ionic equation after elimination of the spectator ions which yields water  $\text{h}^+ \text{aq} + \text{oh}^- \text{aq} \rightarrow \text{h}_2\text{o} \text{l}$  the spectator ions in  $\text{koh} \text{aq}$  and  $\text{hno}_3 \text{aq}$  are  $\text{k}^+ \text{aq}$  and  $\text{no}_3^- \text{aq}$  how to identify and list the

**ionic equations and spectator ions numerade** - Oct 01 2022

web ionic equations and spectator ions in chemistry an ion is an atom or molecule that has a net electric charge due to the loss or gain of one or more electrons ions containing positive charge are cations and those containing negative charge are anions an ion with a net charge of zero is electrically neutral

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web apr 6 2022 spectator ion a spectator ion is an ion that exists as a reactant and a product in a chemical equation a spectator ion can therefore be observed in the reaction of aqueous solutions of sodium carbonate and copper ii sulfate but does not affect the equilibrium what are spectator ions

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web 18 terms lourdes l22 preview terms in this set 4 molecular equation showing the complete chemical formulas of reactions and products  $\text{pb}(\text{no}_3)_2 \text{aq} + 2\text{kl} \text{aq} \rightarrow \text{pb}(\text{i})_2 \text{s} + 2\text{kno}_3 \text{aq}$  complete ionic equation an equation written with all soluble strong electrolytes shown as ions

**8 11 ionic equations chemistry libretexts** - Aug 11 2023

web the  $\text{ag}^+ \text{aq}$  and  $\text{cl}^- \text{aq}$  ions become  $\text{agcl} \text{s}$  but the  $\text{na}^+ \text{aq}$  ions and the  $\text{no}_3^- \text{aq}$  ions stay as  $\text{na}^+ \text{aq}$  ions and  $\text{no}_3^- \text{aq}$  ions these two ions are examples of spectator ions ions that do nothing in the overall course of a chemical reaction

**16 18 net ionic equations chemistry libretexts** - Oct 13 2023

web aug 8 2022 a spectator ion is an ion that does not take part in the chemical reaction and is found in solution both before and after the reaction the net ionic equation is the chemical equation that shows only those elements compounds and ions that are directly involved in the chemical reaction

**which ions if any are spectator ions in the reaction** - Apr 26 2022

web jul 26 2017 answer the spectator ions are explanation in the net ionic equations we are not include the spectator ions in the equations spectator ions the ions present on reactant and product side 16 used to grind chemicals to powder tmraor nda stlepe star 4 4 5 heart 181 verified verified answer food

**10826 ap chemistry chemical equations worksheet loudoun** - Jul 30 2022

web the new format requires students to write balanced chemical equations showing only the reacting substances excluding spectator ions for three different sets of reactants and to answer a short question requiring no calculator about each reaction

the questions are intended to test the students understanding of the meaning of the reactions

*spectator ions learn their role in reactions examples* - Mar 26 2022

web jun 2 2023 the spectator ions are cut out from a reaction hence the net ionic equation for the above reaction would be  
 $2\text{Cl}^- \text{aq} + \text{Cu}^{2+} \text{aq} \rightarrow \text{CuCl}_2 \text{s}$   
 $2\text{Cl}^- \text{aq} + \text{Cu}^{2+} \text{aq} \rightarrow \text{CuCl}_2 \text{s}$  these spectator ions are not actively involved in the reaction the existence of  
 spectator ions affects the debye length