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| In these activities you will identify equivalent expressions involving rational numbers. After completing the activities, discuss and/or present your findings to the rest of the class. |
| **TI_SMallGroup_45p (3)Activity 1 [Page 1.3]** |
| 1. Make a conjecture about which, if any, of the following are equivalent expressions and why. Think about the order of operations, in particular subtracting a quantity, and what that means. Use the TNS activity to check your conjecture.  a.  b.  c.  d. |
| 2. Identify the following statements as true or false. Use the TNS activity to support your reasoning.  a. In the expression , the variables *a* and *b* must always have different values.  b. is equivalent to 5*ab.* |
| c. is equivalent to *b.*  d. If *a* and *b* have the same value, then the expressions 2*a* and 3*b* will never have the same value. |
| 3. For each of the following, find an equivalent expression of the given form where *c*, *d,* and *e* are rational numbers. Use the TNS activity to check your thinking.  a. of the form :  b. of the form : |
| c. of the form :  d. of the form : |

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| **TI_SMallGroup_45p (3)Activity 2 [Page 1.5]** |
| 1. On page 1.5 enter the two given expressions and Submit. Generate values for the table and use them to answer the question: As *a* goes from 1 to 500 and beyond, which of the two expressions has the larger value? Explain why your answer makes sense in each case.  a. and  b. 2*a* and  c. and  d.  *and* |
| 2. The cost to belong Bey’s music club is $14, and you can download a song for $2. The cost to belong to Mado’s music club is $8, and you can download a song for $3.  a. If you downloaded 4 songs, which music club would be cheaper? Explain your thinking.  b. Let *a* represent the number of songs you downloaded. Write expressions for downloading “*a*” songs from each club. Enter the expressions on page 1.5 and Submit.  c. Use the table to determine which music club will be the least expensive. |