Answer

4. A. x = -2 the answer
   B. x = 0 the answer
   C. x = 0 the answer
5. A. Wrong solution
      x = -1 the answer
   B. Correct solution
      x= -1/4 the answer
6. A. x = 1/7 the answer
   B. Missing! 3^{2x+1} = ?missing data
   C. Step 3 : x = 2 the answer
7. Yes, it is true that if both sides of the exponential equation have different bases, logarithms are used to solve the exponential equation.
8. A. x = (log 7/log 4) -1 the answer

Explanation

4. A. $3^{2x+2} = 3^{x}$
Step 1 : $3^{2x+2} = 3^{x}$
Step 2 : 2x + 2 = x
Step 3 : 2x - x = -2
Step 4 : x = -2 the answer

B. $5^{2x}-1=0$
Step 1 : $5^{2x}-5^{0}=0$
Step 2 : 2x - 0 = 0
Step 3 : x = 0/2
Step 4 : x = 0 the answer

C.$3^{x}+1=0$
Step 1 : $3^{x}+3^{0}=0$
Step 2 : x +0=0
Step 3 : x = 0 the answer

5. A. Wrong solution
$16^{x+1}= (1/4)^{x-1}$
Step 1 : $(4^{2})^{x+1}=(4^{-1})^{x-1}$
Step 2 : 2x+2= -x+1
Step 3 : 2x+x=-1-2
Step 4 : 3x = -3
Step 5 : x = -3/3
Step 6 : x = -1 the answer
   B. Correct solution
      x =-1/4 the answer