Solving Exponential and Logarithm Equations

- If possible, write both sides of the equation with same base, *b*.
  - Example: What is the solution of $256^{2x} = 64$?

- If not easily possible to write both sides of the equation with the same base, use logarithm properties to gain access to the exponent variable. Take log or ln of both sides.
  - Example: What is the solution of $6^{4x} = 512$?

  - Example: What is the solution of $5^{2x} = 3500$? *Use calculator method*.

- Example: What is the solution of $\log(5x + 2) = 2$?

- Example: What is the solution of $\log 2x^2 - \log 5 = 1$?

- You invest $500 at an annual interest rate of 5.25%, compounded continuously. How long will it take your money to double?